Comic Relief Auction News

The best-selling RISC OS magazine in the world

ACORN USER

incorporating Acorn archimedes WORLD



NEW package NEW possibilities

Plus

- Using Impact Pro
- Ovation Pro macros
- More on Java
- BETT show report

tau PRESS
ISSUE 205 MARCH 1999 £3.95

CASTLE TECHNOLOGY

FOR ALL YOUR ACORN HARDWARE & PERIPHERALS

INTERFACES

25% off when bought with drive or scanner etc



CT's Storm SCSI interface offers unbeatable performance. Using 15MB/s SCSI components and our ultra-reliable SCSI FS, Storm's a guaranteed winner.

	Ex VAT	Inc VAT
A30x0 IDE interface kit - 2.5" hard drive	£52	£61.10
A3020 fixing kit - 2.5" hard drive	£8	£9.40
A3/400 IDE interface for 2.5" & 3.5" h.d.	£60	£70.50
Storm8 SCSI2 interface - A30x0 A4000	£88	£103.40
Storm16 SCSI2 i/f - A300/A400 A5/7000	£96	£112.80
StormDMA32 SCSI2 i/f RPC	£128	£150.40
Storm16 SCSI2/10BaseT Ethernet i/f	£148	£173.90
Storm16 SCSI2/10BaseT&2 Ethernet i/f	£196	£230.30

HARD DRIVES (BARE)

170MB A3000/A3010 interface included	£95	£111.63
170MB A3020 fitting kit included	£59	£69.33
170MB A300/A400 interface included	£100	£117.50
500MB A3000/A3010 interface included	£128	£150.40
500MB A3020 fitting kit included	£89	£104.58
500MB A300/A400 interface included	£134	£157.45
210MB 3.5" IDE for A4000 & A5000	£45	£52.88
500MB 3.5" IDE for A4000 & A5000	£59	£69.33
1.2GB 3.5" IDE for RiscPC & A7000/+	£69	£81.08
2GB 3.5" IDE for RiscPC & A7000/+	£80	£94.00
4GB 3.5" IDE for RiscPC & A7000/+	£99	£116.33
100MB 3.5" SCSI	£39	£45.83
500MB 3.5" SCSI	£65	£76.38
2GB 3.5" SCSI	£115	£135.13
4GB 3.5" SCSI	£149	£175.08
6GB 3.5" SCSI	£239	£280.83

EXTERNAL SCSI CASES

for hard drives CD drives & removeable drives
FREE headphones and data cable worth over £20



The unique Combo Case - takes any two SCSI devices & gets rid of all those cables, mains leads etc. Accepts any 5.25 unit.

Acorn M E U 2x CD + free 5.25" slot	£69	£81.08
Case for single SCSI device	£40	£47.00
Combo case for 2 SCSI devices	£60	£70.50

SCANNERS

inc FREE software worth £49



The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageMaster software and TWAIN driver. Free PC interface/software kit (SCSI only). Optional transparency adaptor available.

ScanExpress 6000 parallel	£99	£116.33
ScanExpress 6000 SCSI	£119	£139.83
ScanExpress 12000 SCSI	£169	£198.58
Scanflat 1200 pro SCSI	£399	£468.83
ImageMaster & Twain	£49	£57.58
Scanflat transparency kit - slides etc	£149	£175.08
ScanExpress transparency kit-slides etc	£75	£88.13
CanoScan 2700F film scanner	£499	£586.33

FIXING KITS, CABLES etc

Podule case for A3000	£16	£18.80
Fixing kits for hard drives	£8	£9.40
A4 IDE hard drive fixing kit	£12	£14.10
A300 series backplane (4 way 4 layer)	£48	£56.40
A7000/+ 1 slot backplane (not with CD)	£34	£39.95
Risc PC 2 slot backplane	£30	£35.25
2nd slice for Risc PC inc 105watt PSU	£99	£116.33
2nd slice for Risc PC	£76	£89.30
SCSI I & II cables choice from	£10	£11.75
SCSI/IDE ribbon cables from	£5	£5.88
SCSI terminator/adaptors (selection)	£10	£11.75
Monitor cable for all Acorn (selection)	£10	£11.75

XTRA HARD DRIVES

Guaranteed 4MB+/sec read transfer rate with Castle Storm DMA32 SCSI card

4GB XTRA 3.5" SCSI	£179	£210.33
8GB XTRA 3.5" SCSI	£329	£386.58
18GB XTRA 3.5" SCSI	£599	£703.83

VIDEO HARD DRIVES

Fastest on market - externally boxed and ideal for Video use - Storm DMA32 card recommended

4GB Video SCSI external	£349	£410.08
9GB Video SCSI external	£599	£703.83
18GB Video SCSI external	£899	£1056.33

CD ROM DRIVES

inc FREE driver software & fixing kit worth £29



Castle Technology's range of CD ROM drives are chosen for their reliability, ease of use and robustness. They have fast access times, and include driver software. They are particularly suitable for multimedia applications.

4x speed SCSI CD ROM drive	£29	£34.08
8x speed SCSI CD ROM drive	£34	£39.95
32x speed SCSI CD ROM drive	£69	£81.08
24x speed IDE CD ROM drive	£45	£52.88
32x speed IDE CD ROM drive	£49	£57.58
IDE CD driver for Risc PC & A7000	£25	£29.38
6x4x2 CD int ReWriter inc !CDBurn	£285	£334.88
6x4x2 Ext CD ReWriter inc !CDBurn	£335	£393.63
16x4x4 CD int ReWriter inc !CDBurn	£349	£410.08
16x4x4 Ext CD ReWriter inc !CDBurn	£399	£468.83
CD ROM fixing kit (data & audio cable)	£4	£4.70

CD TOWERS

7 SCSI CD towers with lockable doors



Add the Castle Technology CD Tower to your network and have simultaneous access to between 7 & 28 CD-ROMs. Enables CD resource discs to remain locked and untouched but accessible from all over the network. Up to 4 towers can be connected to one computer. Fully compatible with Access CD network software.

8x CD 7 drive Tower	£379	£445.33
32x CD 7 drive Tower	£579	£680.33

SPECIAL OFFER!

128K ISDN MODEMS

Join the digital revolution at lightning fast speeds! Using a Castle Technology ISDN modem (connected to an Integrated Services Digital Network pair of lines from BT), you can take advantage of fast Web browsing, fast data transfer, fast faxing, and a hi-performance phone line – all from one hi-tech box! Choose from four network/stand-alone models at great prices!

Special offer from £99 £116.33 inc VAT

KEYBOARDS MICE ETC

Ergo keyboard for pre Risc PC	£69	£81.08
Ergo keyboard for Risc PC A7000/+ N/C	£39	£45.83
Keyboard for Risc PC A7000/+ N/C	£19	£22.33
Keyboard cable (6 way)	£10	£11.75
Mouse for all Acorns (not A7000 etc)	£12	£14.10
Mouse for A7000/+ N/C	£15	£17.63
Mouse balls heavy (pack of 10)	£15	£17.63
Floppy drive any Acorn except A300 A4	£30	£35.25
Replacement floppy drive for A4	£79	£92.83

REMOVABLE DRIVES

- free media with all drives



For flexible, expandable storage, the infinite capacity of a removable drive is perfect. All drives are the latest spec, and internal versions can be fitted into the CT Combo case. Data transfer rate up to 8.8MB/sec (Nomai).

ZIP drive internal 100MB SCSI	£99	£116.33
ZIP drive external 100MB SCSI	£99	£116.33
ZIP drive external parallel not A300 etc	£109	£128.08
Iomega Parallel ZIP driver (100MB)	£25	£29.38
MaxIT internal 500MB SCSI drive	£129	£151.58
JAZ1GB internal SCSI drive	£189	£222.08
JAZ 1GB external SCSI drive	£219	£257.33
SyJet internal 1.5GB SCSI drive	£219	£257.33
SyJet external 1.5GB SCSI drive	£255	£299.63
JAZ 2GB internal SCSI drive	£259	£304.33
JAZ 2GB external SCSI drive	£279	£327.83
PD 24x CD & 630MB optical SCSI drive	£249	£292.58

MEMORY

A300 & A400 1-4MB	£75	£88.13
A300 & A400 4-8MB	£119	£139.83
A3000 1-4MB	£55	£64.63
A3000 4-8MB	£149	£175.08
A3000 serial port upgrade	£25	£29.38
A3010 1-2MB	£25	£29.38
A3010 1-4MB	£59	£69.33
A3020 & A4000 2-4MB	£35	£41.13
A5000 2-4MB	£60	£70.50
A5000 4-8MB	£139	£163.33
16MB SIMM - Risc PC A7000/+	CALL	CALL
32MB SIMM - Risc PC A7000/+	CALL	CALL
64MB SIMM - Risc PC A7000/+	CALL	CALL
128MB SIMM - Risc PC A7000/+	CALL	CALL
Risc PC 2MB VRAM	£75	£88.13

NEW NEW NEW!!

BJC 7000 – THE ULTIMATE COLOUR BUBBLE-JET PRINTER FROM CANON

This 4-colour bi-directional printer has a resolution of 1200x600dpi, and can print up to 4.5 ppm on paper up to A4+ size (so you can print right to the edge of A4) Choose from Canon's special hi-resolution papers & optional Photo Cartridge for Super PhotoReal quality prints. For sheer quality and durability, this has to be the one!



Special price only £189 £222.08 inc VAT

PROCESSORS & RISC OS

Risc OS 3.11 chip set	£25	£29.38
Risc OS 3.11 manual set	£20	£23.50
Risc OS 3.11 hardware upgrade - A300	£20	£23.50
ARM 610 processor (2nd user)	£69	£81.08
ARM 3 processor for A3000 A300 A400	£99	£116.33

MODEMS

All modems are external and come with FREE on-line time

56k modem	£59	£69.33
128k ISDN modem	£99	£116.33
128k ISDN + 2 analogue phone ports	£109	£128.08
128k ISDN hub router with 10BaseT	£249	£292.58
128k ISDN modem router (managed)	£385	£452.38

COMBOS (HD & CD)

Full range available - free fitting in combo case when all purchased at the same time

8x CD & 100MB HD - external SCSI	£130	£152.75
8x CD & 500MB HD - external SCSI	£150	£176.25

REMOVABLE MEDIA

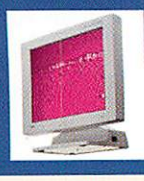
Zip 100MB media	£8	£9.40
Zip 100MB media (6 pack)	£45	£52.88
Syquest 105MB media	£29	£34.08
Syquest 135MB media	£21	£24.68
Syquest 230MB media	£19	£22.33
Syquest 270MB media	£32	£37.60
MaxIT 500MB media	£29	£34.08
Nomai 750MB media	£38	£44.65
JAZ 1GB media	£58	£68.15
SyJet 1.5GB media	£55	£64.63
JAZ 2GB media	£79	£92.83
PD 630MB media	£18	£21.15
CD 630MB write once media (Pk of 10)	£12	£14.10
CD 630MB re-write media	£12	£14.10

COLOUR MONITORS

3 year warranty on all monitors (1 year on AKF18)

The latest developments in TFT screen technology bring the ProLite 36 space-saving flat screens from Iiyama. The 14.1" screen has a viewable area almost 17" and a maximum resolution 1024x768. It is ecologically advanced with low power consumption and reduced eye strain. Suitable for schools or business.

£599 £703.83 inc VAT



AKF18 14" grade B - pre RiscPC"	£79	£92.83
14" SVGA	£89	£104.58
15" digital SVGA	£110	£129.25
17" digital SVGA	£200	£235.00
15" digital SVGA Iiyama	£159	£186.83
17" digital SVGA Pro 0.25 Iiyama	£340	£399.50
21" digital SVGA Iiyama	£729	£856.58
14" colour LCD display (TFT Analogue)	£599	£703.83

INKJET PRINTERS

inc FREE data cable & Acorn driver WORTH £20



Advanced inkjet technology for bright colour images & fast printing times. Up to 1200dpi resolution (virtual photographic quality). Supplied with Acorn drivers & data cables.

CANON BJC-250	£84	£98.70
CANON BJC-4300	£105	£123.38
CANON BJC-4650	£227	£266.73
CANON BJC-7000	£189	£222.08
EPSON Stylus colour 440	£115	£135.13
EPSON Stylus colour 640	£149	£175.08
EPSON Stylus colour 850	£219	£257.33
Parallel printer cable	£10	£11.75
Turbo driver for above printers	£45	£52.88
Acorn printer driver for any listed printer	£10	£11.75
TCP/IP (LPR) postscript printer driver	£175	£205.63

SPECIALS

DOA warranty only

JP150 sheet feeder	£10	£11.75
Master 128 motherboard	£10	£11.75
German keyboards RiscPC/A7000 etc	£10	£11.75
A5000 Power Supply Unit	£15	£17.63
SJ Econet Bridge	£20	£23.50
Acorn Econet interface	£5	£5.88
SJ Econet starter kit	£20	£23.50
PC card for A3000 A3010 A3020 A4000	£99	£116.33
Startwrite wordprocessor	£5	£5.88

DELIVERY CHARGES - Next day insured		
Orders over £200 paid by debit card	FREE	FREE
Small items	£6	£7.05
All other orders	£11	£12.93
Fitting charge (inc collection)	£18	£21.15

We welcome payment by cheque (allow 5 days to clear), Credit and Debit cards.

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Sales lines open Monday to Friday 9.00am till 5.00pm
Saturday 9.00am till 1.00pm

Contact us by e-mail: sales@castle-technology.co.uk
Visit our web site! http://www.castle-technology.co.uk

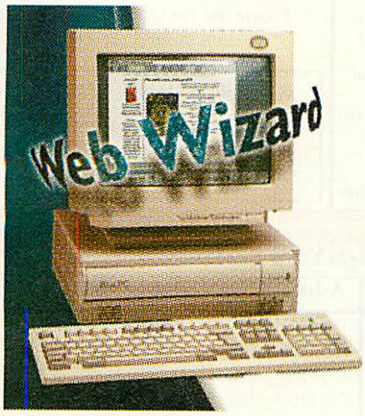
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All products carry a full 1 year warranty unless otherwise stated.

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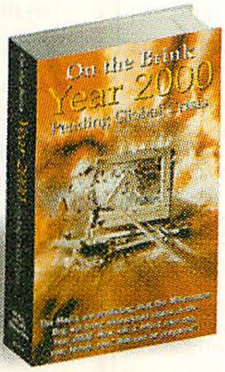
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Next month in Acorn User

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CTA DIRECT

See us at the Acorn South West Show

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CTA DIRECT ARE NOW *INTERNET SERVICE PROVIDERS*

We can offer Domain names, registration and maintenance, web design, virtual server, secure server, Web server housing, Web & FTP space.

Introductory special offers

** £25.00 Voucher or Webster XL **
*** with all packs ***

1 years unlimited access for £99inc vat
33K Modem and 1 yr. for £99 (£116.33)
56K V90 Modem + 1yr £125 (£146.88)

Desktop FAX MODEMS

33600 Voice BABT approved	£40.00	£47.00
56k x2 / V90 3Com USR	£118.30	£129.00
56k Flex /V90 (Rockwell)	£58.72	£69.00
ISDN modem (external)	£169.36	£169.00
High speed serial cards from	£78.30	£92.00

Internet & Modem Software

Ant Internet Suite	£94.05	£110.51
ArcFAX Fax software	£26.38	£31.00
WebsterXL Browser	£21.28	25.00



High Quality Acorn ERGO mouse £12.00 + VAT

MONITORS

Ring for Specials

	Ex. VAT	Inc. VAT
14" SVGA 0.28 (3yr on-site)	£89.00	£104.58
14" SVGA 0.28 Multi-Media	£105.00	£123.38
15" SVGA 0.28 (3yr on-site)	£110.00	£129.25
15" SVGA 0.28 Multimedia	£129.00	£151.57
15" Iiyama Vison Master 350	£129.00	£151.57
17" SVGA 0.28 (3yr on-site)	£185.00	£217.38
17" SVGA 0.25 (3yr on-site)	£275.00	£323.13
17" Iiyama Vison Master 702	£249.00	£292.58
17" Iiyama Pro 400	£325.00	£381.88
19" SVGA 0.26 (1yr RTB)	£280.00	£329.00
19" SVGA 0.26 (3yr on-site)	£360.00	£423.00
19" Iiyama Pro 450	£460.00	£540.50
21" SVGA Mitsub' (D'tron)	£499.00	£586.33
21" SVGA 0.25 (3yr on-site)	£540.00	£634.50
21" Iiyama Pro 501	£665.00	£781.38
38" SVGA (1yr on-site)	£1595.00	£1874.13
AKF53 Multisync (14")	£165.00	£193.88

Various 2nd user monitors available.

Multisync A300/3000 cable	£8.50	£9.99

THE BEST! PRINTER PRICES

(Please ring for latest prices)		Ex. VAT	Inc. VAT
Canon BJC80W portable col.		£159.00	£186.83
Canon BJC 250 colour	A4	£84.00	£98.70
Canon BJC 4300 colour #	A4	£110.00	£129.25
Canon BJC 4300 Scan ! #	A4	£149.00	£175.08
Canon BJC 4650 colour #	A3	£227.00	£266.73
Canon BJC 4650 Scan ! #	A3	£275.00	£323.13
Canon BJC 7000 colour *	A4	£169.00	£198.58
Epson Stylus 440 colour	A4	£110.00	£129.25
Epson Stylus 640 Colour	A4	£135.00	£158.63
Epson Stylus 850 Colour	A4	£230.00	£270.25
Epson Stylus 1520 Colour	A3	£499.00	£563.87
Epson Stylus photo 700 #	A4	£149.00	£175.08
Epson Stylus Photo EX #	A3	£328.00	£385.40
HP 420	A4	£74.00	£86.95
HP 695C Colour	A4	£110.00	£129.25
HP 895CXI Colour	A4	£200.00	£235.00
HP LASERJET 1100		£249.00	£292.58
HP LASERJET 6P		£494.00	£580.45
Photo drivers for #		£58.72	£69.00
Scanner drivers for !		£29.79	£35.00

* driver soon *** FREE Acorn driver by request ***

POWERED SPEAKERS

	Ex. VAT	Inc. VAT
60 watts with PSU	£16.98	£19.95
240 watts with PSU	£24.68	£29.00
Subwoofer system with PSU	£42.00	£49.35

OFFER *FREE Internet connection* worth £99 & 6 months 0% interest free credit, on all new systems.

6 months Interest Free Credit On All Systems inc peripherals software and 2/3 yr optional warranties

233Mhz SA RiscPC Offers



e.g. RPC SA 2M+32Mb/2.1G/40x CD & 17" monitor for only £1125 + VAT or £34.00/month via L.C.F. *

RPC SA bases from **£850** inc VAT or £22.00/month via L.C.F. *

SA J233 Web Wizard

2M+32Mb/2.1G/24x CD/15" mon/Stereo Spk & FREE software inc !Browse, Jarva and Word 6/7 compatibility. Free 56K modem for only £1145 + VAT

Finance Deals

* 0% Buy now pay 6 months later.
* Can convert into standard finance package, no penalty
* Low Cost Finance Option @ 1.5% per month (19.9% APR) upto 5 years to pay.
* No early settlement penaltys.
* Can make additional purchases upto your credit limit without re-application.
***Ring For full details**

A7000+ System Offers



e.g. A7000 +16M / 2.1G / 40x CD /15" mon & Stereo Spk for only £749 exc VAT or £23.00 / month via L.C.F.

Please ask for other combinations

A7000 + Peak Performer

8M / 2.1G / 32x CD /14" mon / Stereo Spk & FREE Software Bundle for only £749 exc VAT (£808 exc VAT for both bundles)

Casio QV100 Digital Camera



PC s/w only £199.00 exc vat (£233.83)

Acorn & PC s/w £280.00 (£329.00)

Qv11a/Qv100 s/w kit £96 (£112.80)

HARD DRIVES AND SUB-SYSTEMS *WHY PAY MORE???*

A3000 /A3010	Ex. VAT	Inc. VAT	A3020 Ex. VAT	A3020 Inc. VAT
85/120 Mb	£ 99	£116.33	£49	£57.58
170 Mb	£109	£128.08	£59	£69.33
340 Mb	£129	£151.58	£79	£92.83
512 Mb	£139	£163.33	£89	£104.58
810 Mb	£149	£175.08	# £124	£175.08
1 Gb	£159	£186.83	# £134	£186.83
2 Gb	£169	£198.58	# £144	£198.58
3 Gb	£179	£210.33	# £154	£210.33

A3000 version includes CD ROM i/f which can be used in A3020 or A4000 For external A3000 add £20.00 +VAT
\# includes partitioning software

A4000/A5000/A400	Ex.VAT	Inc. VAT
420M #	£49	£57.58
420Mb *	£76	£89.30
540Mb *	£85	£99.88
700Mb *	£93	£109.28
1.2Gb	* £115	£135.13
2.1Gb	* £125	£146.88
3.2Gb	* £135	£158.63
4.0Gb	* £145	£170.38

* inc. internal removable HD & CD ROM i/f. For partitioning software only deduct £25.00 + vat (29.38)

RPC /A7000	Ex. VAT	Inc. VAT
420M #	£49	£57.58
512M	£59	£69.33
1.2G	£70	£82.25
2.1G	£80	£94.00
3.2G	£90	£105.75
4.3G	£99	£116.33
6.4G	£109	£128.08
8.4G	£119	£139.83
16.8G	£225	£264.38

\# limited supply



ACORN TRACKBALL & MOUSE £29.79 + VAT

CD-ROMS

IDE			SCSI		
40x	£49.00	(£57.58)	32x	£70.00	(£82.25)
32x	£45.00	(£52.88)	16x	£40.00	(£47.00)
24x	£39.00	(£45.83)	12x	£34.00	(£39.95)
8x	£30.00	(£35.25)	8x	£30.00	(£35.25)

For EXTERNAL IDE or SCSI 1 add £50.00 + VAT (3.5 IDE driver £15 + vat) IDE int. fitting kit £5 inc.
For external SCSI II add £55.00 + Vat.
Internal SCSI fitting kits from £10 + vat

SCSI HARD DRIVES

540M (# limited Stock)	£60.00	(£70.50)
1.0Gb	£70.00	(£82.25)
2Gb (7200rpm) #	£110.00	(£129.25)
4.3Gb (5400 or 7200rpm)	£150.00	(£176.25)
4.3Gb (10,000rpm) #	£199.00	(£233.83)
9.1Gb (7200rpm)	£249.00	(£292.58)
18.6Gb 7,200rpm	£425.00	(£499.38)

CD-ROM WRITERS



Prices Start from £175.00 +

2x6x Writer (Ide)	£175.00	(£205.63)
4x2x6x Re-Writer	£199.00	(£270.25)
CD-BURN	£49.00	£57.58
CD-SCRIBE2	£49.00	£57.58



SCSI 8x **Autochanger** £85.00 + vat (£99.88)

IDE Removable Drives

Zip 100 IDE	£65.00	£76.38
Zip SCSI ext	£85.00	£99.88
Zip SCSI int	£85.00	£99.88

IDE drives require suitable drivers/ hardware

Parallel Removable Drives

Zip Parallel *	£110.00	£129.25
Jaz 1G Parallel*	£239.00	£280.83
Syjet 1.5G p'll	£249.00	£292.58
Jaz 2G Parallel*	£315.00	£370.13

SCSI Removable Drives

PD650/CD	£139.00	£163.33
Nomai 750	£165.00	£193.88
Jaz 1G int	£189.00	£222.08
Jaz 1G ext	£199.00	£233.83
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Goodbye Acorn, hello

It's not a food additive, nor a trendy teen pop group, or indeed an East End postal district – E14, or Element 14 Ltd, to give it its full title, is the new name for Acorn Computers Ltd, sometimes referred to as ACL. The name change was widely expected and was instigated to further distance the company from its old Acorn image which either has no positive value in the digital TV markets Acorn has been aspiring too or even a negative value in some instances. The Acorn name and brand isn't yet finished, however. As long as Acorn builds A7000s and Risc PCs, it's likely these will remain Acorn branded. The holding company, of which E14 is a key part, Acorn Computer Group plc, also remains as before.

Stan Boland, CEO of E14, explained: "Although well known in the UK, the brand values associated with Acorn are no longer an accurate reflection of the work that we are undertaking or the markets that we have been moving into. Everyone in the company is excited at the prospect of playing a part in the creation of a powerful high-tech company." While *Acorn User* readers are generally fans of Acorn technology and have a sentimental spot for the traditional Acorn branding and the acorn nut logo, in general IT industry terms Acorn is either an unknown – especially in international markets, or is firmly associated with the education market, which Acorn is actively leaving behind. Whether Acorn fans like it or not, the name change was inevitable and right to do given the direction the company is going in.

In fact it shouldn't be forgotten that Acorn has been down this path once before with Online Media. It was always intended that Acorn's Online Media division should eventually become an independent company in its own right. However, digital interactive TV never got off the ground and Online Media failed before it could win independence from Acorn. Ironically, E14 is treading some of the same steps taken by Online Media. E14, like Online Media, is not actively addressing the now rapidly emerging "conventional" satellite and terrestrial broadcast digital TV market. Instead, E14 is initially looking at what might be described as niche markets, serving pilot roll-outs of new-technology digital TV which will incorporate an element of interactivity and so broadband connectivity through DSL (digital subscriber line) and ATM (asynchronous transfer mode) standards.

What makes things brighter for E14 compared with Online Media is the fact that the broadband TV market is much closer to maturity than when Online Media was formed five years ago. Then, ATM was a relatively undefined standard, it was expensive and there were doubts that the video server technology, delivering relatively poor quality MPEG1 pictures, was commercially ready. Today costs are much lower, the networking standards are mostly stable and the industry has settled on the much more acceptable MPEG2 digital video standard. E14 has already won set-top box orders worth 20,000 units based on the new standards even though these are based on technology which can be directly linked with work pioneered by Online Media.

E14 sees its long term future and hoped for success in the ambitious area of designing silicon which can be cleverly software programmed to deliver new or alternative features without the need for major hardware re-design. The idea is that a single E14 chip set, with a powerful StrongARM core processor, could be configured for multiple regional markets and variations in local standards through software revisions only. Theoretically, this will be a cheaper option than depending

Minister visits Acorn



Charles Clarke MP – a Parliamentary Under Secretary of State with specific interest in information technology, visited the Acorn stand at the annual BETT education technology show in January. Clarke, who also officially opened the show, spent some time on the stand which was organised by Acorn's new official distributor, CTL.



Charles Clarke MP calls by the Acorn/CTL BETT stand

The Minister quickly got to grips with a Risc PC connected to the Internet, browsing the Web with apparent ease. He commented that it was good to see that UK technology still had its place in the domestic education market. Jack Lillingston, CTL's managing director, reminded Clarke that although Acorn had suffered some setbacks in the last year with regard to its education market presence, many schools remained faithful to Acorn and the brand's ongoing reorganisation would focus on education and the National Grid for Learning initiative which the government has launched to encourage UK schools to get wired up to the information superhighway.

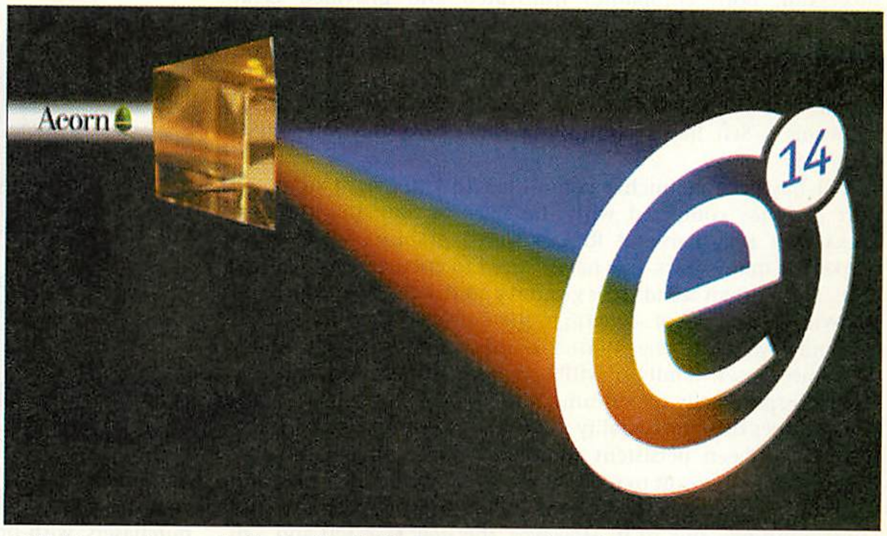
Other visitors to the Acorn/CTL stand at BETT included a senior Microsoft education marketing manager, Xemplar's managing director Brendan O'Reilly and several ex-senior Acorn managers. The Microsoft interest in Acorn extended two ways; a Risc PC was running Windows on the Acorn stand via a Citrix-equipped Windows NT server and another was doing the same demo on the Microsoft stand itself.

Brendan O'Reilly's visit to the Acorn stand was especially poignant as just a week earlier it was finally revealed that Acorn had decided to cash in its 50 percent holding in the educational IT solutions distributor. Former Acorn managers calling by the Acorn stand included Sue Wall, who was once responsible for administrating Acorn's independent software vendors

Element 14

on heavily customised hardware.

In true Acorn tradition, E14 is attempting to deliver an attractive solution through the use of innovative technology which combines software and hardware expertise. However, having a good idea and even, in the end, a good product is not necessarily enough. Most of the big names now selling digital TV products are very big names indeed – VLSI Technology, Panasonic, Nokia and Pace to name but four and all use the conventional hardware-centric product model. Their ability to produce exceptional numbers of their products means they can drive costs down very effectively. It's a tough challenge for E14 to deliver a solution which will overcome the traditional hardware solution, plus E14 isn't an exclusive player in the software-centric field. Some commentators also think E14 is too far behind the competition and may have missed the boat.



We spoke extensively with Stan Boland and it's evident that while he's not over-confident of ultimate success, he doesn't believe that the software programmable approach to digital TV will fail to crack the market and rejects suggestions that E14 has missed the bandwagon. Boland's main concern is to keep E14 financed until the engineers, both in Cambridge and the newly acquired silicon design team in Bristol can deliver a solution which can win its place in the digital TV market. E14 are all too aware of the success that ARM Ltd is now enjoying.

At the time of writing, ARM's shares were worth over £15 each, making the company worth around $1.5 billion – more than Acorn's entire earnings in its 20 year history. Boland feels that if E14 can get it right, E14 can emulate ARM's success in developing silicon intellectual property which can be licensed to major manufacturers as digital TV finally replaces conventional analogue TV technology over the next 15 years or so. Acorn has seen too many false dawns in its past but E14 does have a good opportunity this time to buck the trend and win success in its new found direction. We'll be watching with interest.

(ISV) support service and Bob Coates, who had been a senior product manager at Acorn since the BBC Micro days.

The CTL-organised Acorn stand was a modest affair away from the main exhibition floor. This was because Acorn's original plans for BETT were cancelled after the Acorn Workstations division was closed last September. Plans to resurrect a presence at BETT were only able to be executed a few weeks before the show took place. However, CTL's Jack Lillingston reported that the dozen or so staff working on the stand rarely had a moment of relaxation during the show. Lillingston also reported that there was particular interest in the new NC-based Acorn Sprinter package.



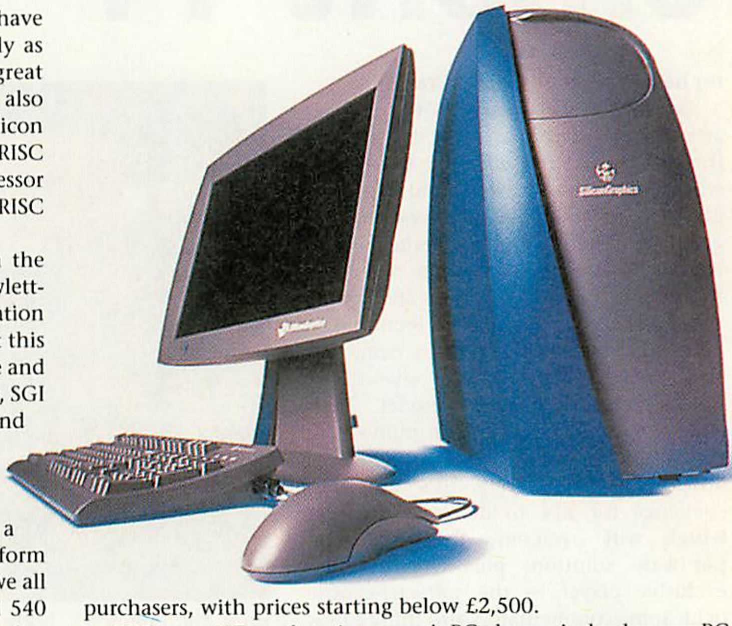
Video killed the magazine star?

Your news editor was surprised to be invited to appear on TV as an Acorn luminary alongside Neil Spellings of Acorn User Groups fame and none other than Acorn, er, E14 CEO, Stan Boland. Alas the invite wasn't from the Beeb or CNN, or any other channel guaranteeing instant recognition down the local supermarket, but from a rather obscure satellite-only channel called .TV (Dot TV).

The programme in question, Blue Chip, is an IT/business current affairs magazine and the focus this time was on Acorn's newly announced name change. Yours truly had discussed Acorn's history at length with the show researcher before the recording was made, but I ended up being portrayed as a digital TV expert – which I never claimed to be. However, I had done some homework and things were going quite well when as quickly as our slot had started, it was over.

Unfortunately, I feel I may have come across rather negatively towards Acorn in reflecting some historic and industry concerns widely voiced elsewhere and I was getting ready to balance the argument I was pursuing with some more positive comment, but never got the chance. So if you got to see the programme – now you know! At least I didn't fall foul of the biggest gaff that evening when Stan Boland, who had religiously referred to E14 at every opportunity, lost his concentration and reverted to referring to his company as "Acorn" by mistake – correcting himself halfway through the second syllable of the word, much to the amusement of presenter Will Hanrahan.

Silicon Graphics goes Acorn-style



It has been said that Acorn once had the opportunity to have emulated the Apple business model and become potentially as successful. Both companies innovated and provided great alternatives to the Wintel PC. In some ways, Acorn could also have invited comparison with workstation manufacturer Silicon Graphics Inc. or SGI for short. Both are dedicated to RISC technology and have close associations with RISC processor platforms – SGI has a controlling interest in the MIPS RISC platform.

SGI has been staunchly committed to Unix right from the start and has competed with the likes of Sun and Hewlett-Packard in the high-end RISC-powered graphics workstation market for many years. PCs have started to encroach even at this level. Rather than stand their ground and risk a King Canute and the Wintel tide kind of scenario in the not too distant future, SGI has bravely taken the Wintel competition head on and developed a new family of MIPS-powered workstations designed specifically for running NT.

How does this news qualify as an *Acorn User* news story? There have been persistent rumours that Acorn bought a licence from Microsoft to port Windows NT to the ARM platform in order to widen the scope of Acorn's hardware appeal. As we all know, nothing came of it. However, the new SGI 320 and 540 series NT workstations might just represent an outline of what might have been if Acorn had indeed journeyed down the NT path. SGI has shown just how inefficient the Wintel PC architecture has become by producing its entry-level 320 range which is roughly four times faster than a typical high-end PC configured for fast graphics. What's more, SGI's solution is not out of the reach of high-end PC purchasers, with prices starting below £2,500.

SGI's new NT workstations aren't PC clones, indeed many PC applications won't run on these machines. SGI has achieved its performance advantage by surgically removing the logic chip-set clutter which lies at the heart of all conventional contemporary PCs and ensured that all performance-critical operations, especially graphics and hard disc access work as fast as possible using a highly efficient directly memory mapped architecture.

With a little bit of artistic licence, some of principles SGI has used to achieve the power of their new workstations is representative of what Acorn has been flogging since the Archimedes was first launched twelve years ago. OK, so you have to dream a bit when making the comparison, but if Acorn could have afforded the kind of development it would ideally have liked over those twelve years, you could bet that the end result wouldn't have been a million miles from what SGI unveiled in January.



RISC OS 4 launch date mystery

Just a couple of days before Christmas 98, the hitherto somewhat dormant Acorn Web site heralded an official announcement that RISC OS 4.0 would be available before the end of January 1999. It's that very time as this is being written, but there is no sign of RISC OS 4 and nobody who ought to be in the know is expecting it to ship now or even in the next couple of months. Unofficial estimates suggest that RISC OS 4 might just scrape into production in time for the Wakefield show in the middle of May.

So why did a press announcement appear on the Acorn Web site so prematurely. Once again, it's unofficial, but a proposed explanation which comes from credible sources suggests that the announcement had been written and uploaded to the Web site on an un-linked page in readiness for RISC OS 4's eventual release. An administrative error caused it to be indexed and linked and so published for all to see. The real explanation remains shrouded in mystery.

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RISC OS Ltd becomes reality

Before Christmas, Paul Middleton, who runs Uniqueway – the Acorn CD-ROM publishing and multimedia business, was tasked by the Phoenix steering committee with the responsibility of negotiating a deal with Acorn to gain the rights to develop and support RISC OS under the auspices of an independent company. As we went to press, all the signs were that, at last, a deal with Acorn was genuinely on the home run.

Paul Middleton was understandably coy about the progress of negotiations when we spoke to him as discussions had entered a critical period, however, he confirmed that a heads of agreement document had been signed with Acorn which basically points to a deal being formally completed by the end of February.

What makes us much more confident about this deal's prospects is that Acorn's CEO, Stan Boland was able to verify what Paul could reveal and Boland also confirmed that Acorn had agreed to a much more affordable licensing arrangement for the proposed new company, RISCOS Ltd, to adopt the operating system. RISCOS Ltd has been registered and the company now exists as a shell waiting for the final go-ahead and appointment of staff.

Although Acorn, or Element 14 (E14) as the company is now to be officially called, doesn't have firm long term plans to use RISC OS for its advanced next-generation digital TV hardware, it is now clear that Acorn will, after all, require the use of RISC OS for some time yet as it lies at the heart of the set-top boxes which will be supplied to customers over the next year to 18 months.

E14 recently won an order for 10,000 RISC OS-based set-top boxes based on the ARM7500FE chip from the Canadian company iMagicTV and the word is that another order for a similar number of set-top boxes will be announced just after this issue of *Acorn User* goes to press. This particular customer is much closer to home and any of our readers in Hull might be interested in this news in particular.

What's not entirely clear is how the development of RISCOS will be shared should RISCOS Ltd win its licence from E14. Stan Boland indicated to us that there would be parallel development, though a cross-licensing deal would ensure either party will gain access to the other's innovations. Our guess is that the completion of RISCOS 4 will probably be the first major task of RISCOS Ltd, despite the apparent announcement that RISCOS 4 would be shipped by Acorn by the end of January. The completion of the deal is critical in another sense as it's unlikely that Millipede's proposed Risc PC hardware upgrade project can proceed without firm guarantees from E14 and RISCOS Ltd about the availability of a suitable version of RISCOS.

In the mean time, Paul Middleton, in one of RISCOS Ltd's first actions, has announced that he is seeking to hear from any freelance or part-time Acorn programmers. He will start compiling a complete register of available talent to help maximise their skills. Paul is looking for contact details, programmers' specialities – for example ARM code, BASIC, C++, drivers – details of any commercial experience (plus typical commercial fee rates if applicable). He would also like to know about the equipment applicants have and their time availability. This information will be collated by RISCOS Ltd to provide a database for potential employers looking for contract or full time coders. Paul Middleton can be contacted via paul@uniqueway.co.uk

Acorn sells Xemplar holding

Just a few days before the BETT education show at London's Olympia exhibition centre, Acorn dropped a minor bombshell by announcing that it had cashed in its half share of Xemplar Education, the joint venture with Apple to provide educational IT solutions to the UK schools market. Acorn education dealerships were the least surprised of all, but some close to Xemplar were surprised as there was a school of thought that Acorn would not raid its investment in Xemplar as the company had significant long term potential.

In the end, Acorn walked away with £3 million, which will be used to help the company stay afloat until its next-generation digital TV developments started to generate revenue. Acorn's CEO, Stand Boland, explained: "The disposal of our stake in Xemplar was a natural step, given ACL's business focus. It reinforces our commitment to becoming a major player in the rapidly growing digital TV market."

Xemplar has not tried to hide the fact that it has found it increasingly difficult to sell Acorn computers into schools. The inflexibility of Xemplar's business model doesn't suit Acorn's declining market and independent dealers have largely filled the gaps left by Xemplar around the country. Indeed, until Apple's recent boost courtesy of the trendy iMac model last year, Xemplar was having tough times selling Apple Macs to schools too.

Xemplar is now a significant supplier of Wintel PCs into the UK education market – not because it wants to be but because it has to in order to survive. The one Acorn product which was evident on Xemplar's BETT show stand was the NC. Xemplar has put a great deal of effort into marketing NC networks to schools and has generated a lot of interest. Whether that interest has translated into satisfactory sales figures is not clear, however.

Although the company has grown and maintained its lucrative relationship with the Tesco Computers for Schools initiative, Xemplar hasn't made any big profits since it was set up in 1996. However, with the government's National Grid for Learning initiative under way and the increasing emphasis on modernising schools computing resources, Xemplar's managing director, Brendan O'Reilly, argued strongly last autumn that he did not expect Acorn to sell its share in the company. These comments came at the time immediately after the closure of the Acorn Workstations division. O'Reilly's instinct which led him to believe that Acorn would continue to take a long term interest in Xemplar clearly let him down.

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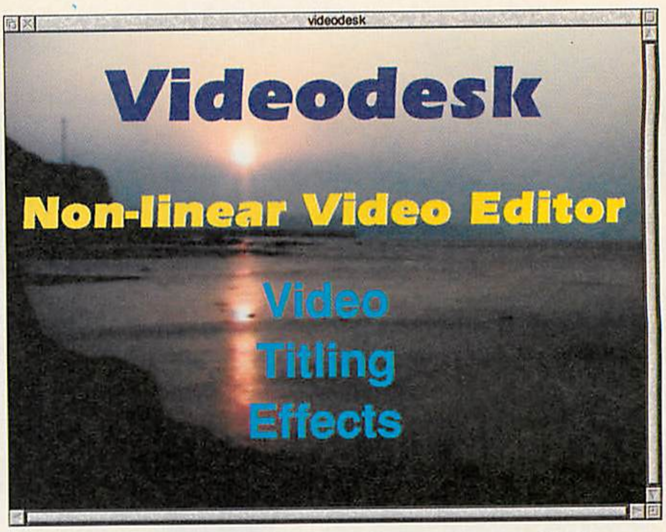
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Videodesk

Videodesk is a powerful non-linear video editing system. It allows full-size, full-colour and full-motion video to be edited to frame accuracy, and effects and titles added. The finished material can then be output back to video for recording or display.

Key Features:

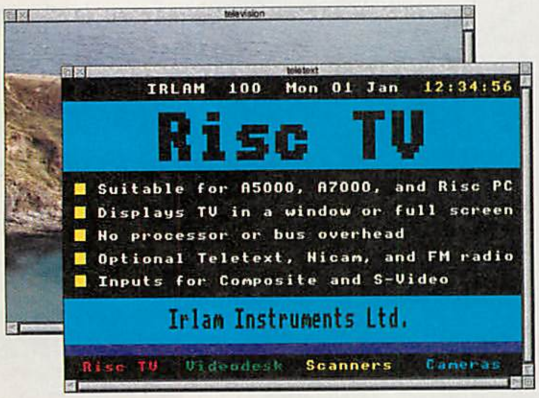
- Composite and S-Video inputs and outputs.
- 50 fields per second capture and playback.
- 24 bit colour range.
- Resolution of up to 768 pixels x 576 lines.
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- VITC Timecode input and output.
- 16 bit stereo audio inputs and outputs.
- Audio sampling at up to CD and DAT rates.
- Multiple audio tracks (polyphonic).
- Instant playback of edits.
- High performance Replay movie capture.
- Multi-level undo and redo.
- Edit Decision List (EDL) generation.



Sophisticated video editing software is supplied as standard, which is flexible and simple-to-use. Editing is performed on a multi-track time-line with separate audio and video tracks.

Video effects are generated digitally and include over 100 dissolves, wipes, fades and slides. Comprehensive titling software uses the RISC OS outline font system, and titles can be made to scroll, flash, fade and be overlayed onto the video.

Risc TV



Risc TV is a unique multimedia digitiser complete with built-in television tuner and audio processor, which allows you to watch television on the desktop and digitise high quality still images from the tuner or an external video source.

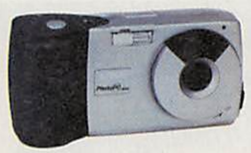
Unlike other digitisers, **Risc TV** uses special hardware to overlay video directly. So, full motion video can be displayed in 24 bit colour, with no processor or bus overhead. Now you can watch television and use your computer!

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i

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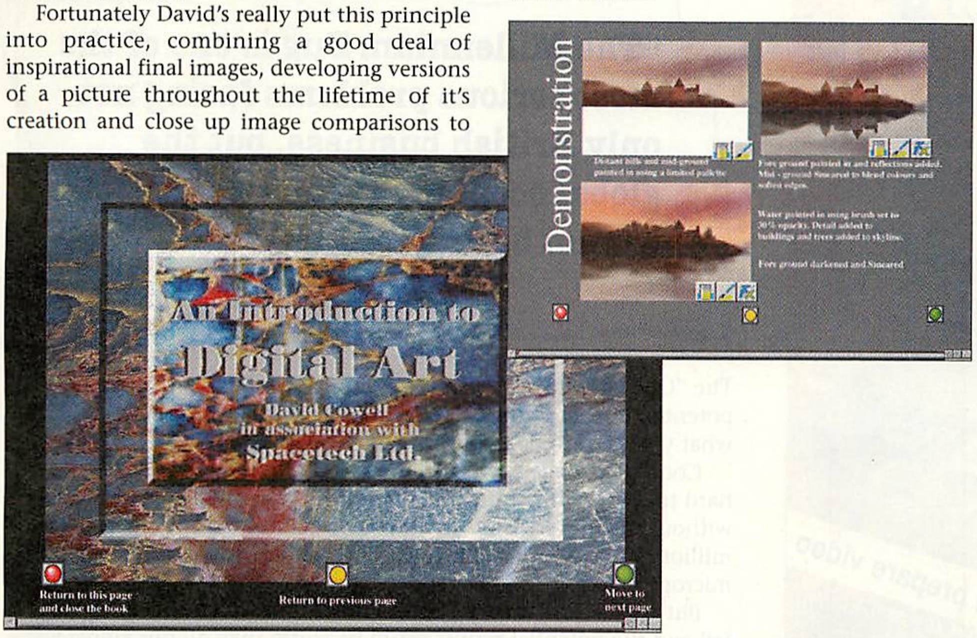
Digital Art

Last month I reviewed Spacetech's *!Photodesk* support CD and was a little disappointed with it's rather mixed content. This latest release is based completely on Dave Cowell's bitmap and vector graphics tutorials, and is an altogether more promising resource. Entitled 'An Introduction to Digital Art' the step-by-step tutorials provide simple yet intuitive instructions for learning the main techniques for use with their respective packages – *!Photodesk* and *!Draw*. Tutorials on graphics should be a visual thing, not a mass of words with few pictures.

Fortunately David's really put this principle into practice, combining a good deal of inspirational final images, developing versions of a picture throughout the lifetime of it's creation and close up image comparisons to show the effect of different tools and processes on a picture. This works very well when combined with David's straightforward descriptions and good range of tutorial examples.

'Digital Art' is an ideal resource for new users of these or similar packages but might also reveal the full potential of a package like *!Photodesk* to a more experienced user. A highly recommended release. The CD is available from Spacetech for £24.95

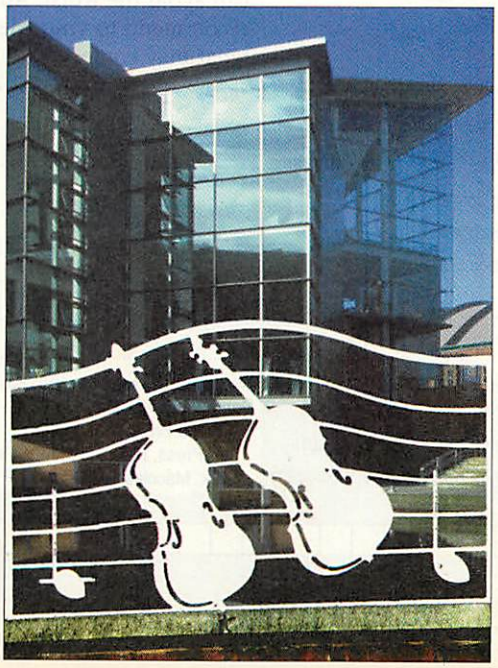
Contact sales@spacetech.co.uk or tel: 01305 822753.



Pic of the month

This issue's Picture of the Month demonstrates *!Photodesk*'s excellent photo manipulation features. The picture is sourced from photos taken by the artist Graham Dean, and processed to form a completely new view of Bridgewater Hall in Manchester. As Graham describes "Both of the source images were originally transparencies, then transferred to PhotoCD. They were manipulated using *!PhotoDesk* to correct converging verticals, and remove distracting detail (streetlamps, etc). The original intention was to have the black railings against the hall – but as the bottom of the Hall original is dark – the railings didn't show up to well.

So the contrast was increased and the black railings masked while the background was painted out. The mask was then inverted, and the colour of the railings inverted. Finally, the railings were masked again, additional white space added to the top of the picture, and the hall cloned in." Graham wins the monthly prize of £20 and a copy of Cerilica's excellent *!Phantasm* application.



MoveIt

As well as being an essential thing to shout if you're a member of the Sweeney, *!MoveIt* is also a handy little utility for owners of the Olympus C-420L digital camera. As regular PD author Jochen Lueg describes "When in extra high resolution mode these cameras can take 9 shots at intervals of one tenth of a second. All shots form a single 640 by 480 frame when downloaded. *!MoveIt* accepts such a sprite and isolates the individual frames in sequence.

It is now possible to run them as a nine frame movie inside the program." As well as being able to import Sprites or JPEGs, *!MoveIt* will run multiple movies at the same time and of course this rather nifty app provides an easy route to animated GIF creation. *!MoveIt* is compatible with anything from an A5000 upwards and can be obtained as shareware from http://www.argonet.co.uk/users/tudor

Vantage Update

Unfortunately the final release of Cerilica's flagship *!Vantage* application has had to be put back to the end of March 99. Sceptics shouldn't get too carried away over this minor delay to ensure proper testing of the application. *!Vantage* is almost ready, and impressive it will be when it eventually hits the streets. Changes have also been made over the issue of documentation.

Due to cost problems of printing different foreign language versions of the manual, Cerilica are now planning to provide a much smaller printed welcome guide, combined with more online documentation. They are also offering assistance in the production of Tutorial books after the release of the software. Although some users are likely to be concerned about the absence of a complete printed manual, online information when implemented properly can often prove much more useful.

Hopefully the usability of the end product will be good enough not to make an issue out of the quality of documentation available, and from my experience with the package so far, this does seem to be the case.

http://www.cerilica.com/
01989 567350

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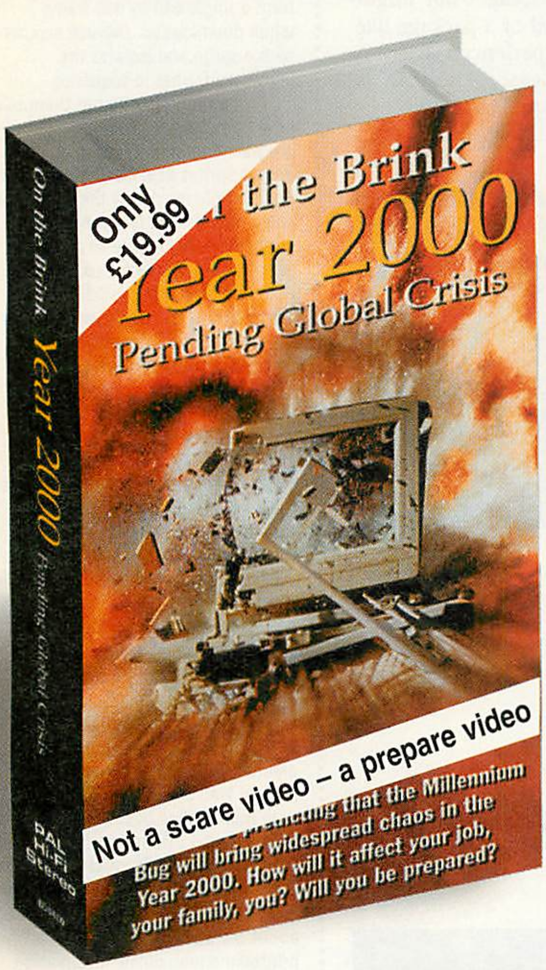
If you're a developer with product news for the page, or a user with questions or views on the Acorn graphics scene, please get in touch. You can contact the Graphics page by writing to me, Paul Wheatley, at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably by e-mail to graphics@acornuser.com

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>
> *Lord Sainsbury, Under-secretary for Science*

Brewed for any browser

The Web Design Group is a band of experienced HTML authors whose aim is to provide guidance and instruction to Web authors at all skill levels. The group was formed to promote valid and creative HTML with no preference for Browser type, screen resolution or HTML editing tool, and above all dedicated to creating Web sites accessible to all worldwide users.

The award-winning WDG Web site offers resources and advice for Web designers starting with the reference specifications for HTML 4.0, HTML 3.2, Cascading Style Sheets (CSS) and a Character Set overview. This explains that the ISO Latin-1 character set should be used for HTML, but characters in the range below 32 and above 127 may not always appear as you expect. We learn that the **&quot** entity name for the double-quote symbol was left out of the HTML 3.2 spec by mistake.



WDG looking good without tables or invisible GIFS

In the Frequently Asked Questions archives there's a CGI programming FAQ that explains the difference between CGI and Java. We're told CGI is used for running programs on a Web server to access databases or text files, while Java is a programming language that can to run programs safely in a Web browser on a client machine. Frequently Encountered Problems are also dealt with sternly, such as "You didn't by any chance try to indent text by using an invisible GIF?"

The Design Elements section features a style guide with useful recommendations for accessibility by many platforms. To avoid the infamous "Click here for more details" anchor text, embed the link in the text so that you don't need to follow the link to understand the surrounding text. Finally, validate the document to check the syntax using one of the listed tools.

The Tools section includes the WDG HTML Validator, their *CG-eye* test kit for debugging CGI scripts and links to the *W3C* validation service and other syntax checking sites. I learned that the WebTechs validation service I've used on Arcade BBS pages is no longer available. The WDG HTML Help BBS is an interactive Web BBS where novice and expert readers put up questions and answer others' queries. As you might expect all the WDG pages display perfectly on *Fresco©*, *Browse* and *WebsterXL*.

The Web Design Group
http://www.htmlhelp.com/

Who is e-14.com?

Some Internet detective work by readers of the Acorn newsgroups has revealed the identity of a new company registered at the same business address as Acorn Computers Ltd in Cambridge, using the *Whois* function. *Whois* is an Internet directory service that locates organisations that have an Internet domain. The names and contact addresses of administrative or technical persons may be listed as well, which may well reveal associations with other companies.

You can try *Whois* for yourself if you have a working Internet connection set up. Suites such as *Acornet* provide a *Whois* function as part of the *Freenet* Internet stack programs with a command line interface, while the *ANT© Suite* offers *Whois* as one of its Tool windows. The Acorn *!Internet* setup doesn't include a *Whois* program, but you can download and use the *Freenet* version with it from http://www.compton.demon.co.uk/ freenet/

Once connected and online to your ISP, you can start using *Whois*. *Freenet* users press f12 and type "whois e-14.com", and after a few seconds, the full record is returned showing the registrant's name, address and other details including the addresses of the name servers for that domain name. *ANT Suite* users have a desktop window icon in which to type the domain name, and the results are returned in a task window.

The default *Whois* server for both programs is located in the US and is called rs.internic.net. This server only holds records for domain names in the hierarchies com, edu, gov, net, and org. To find UK domains like co.uk, org.uk, net.uk, ltd.uk and plc.uk use the UK server at whois.nic.uk. The *Freenet* client can be told to use this hostname in the command line with a switch: whois -h whois.nic.uk acorn.co.uk, while the *ANT Suite* has a box for the appropriate *Whois* server name.

Port anyone?

Dave Raggett works for the *World Wide Web Consortium* in Bristol, and telecommutes most days to MIT in the USA from his home in Wiltshire. Dave has been working at the forefront of W3C's HTML development on *Spice*, a blend of Cascading Style Sheets with an extended form of JavaScript.

A spinoff from this is his beta-status program *HTML TIDY*, which can correct mistakes and tidy up sloppy editing in HTML 4.0 pages, leaving you with nicely laid-out markup. The program source is in ANSI C which can be downloaded and compiled successfully with Acorn C. Maybe someone would like to produce a RISC OS desktop interface?

HTML Tidy
http://www.w3.org/People/Raggett/tidy/

Flexible Pages

David Ramsden's Acorn pages are a useful compendium of links and downloads. The pages feature some familiar graphics and animations reflecting his enthusiasm for Acorn computers despite the uncertain situation. The comprehensive links page is neatly categorised and tabulated to cover most areas of interest and I'm pleased to note that there are five Bulletin Board sites listed. If you want to find any freeware software, utility or application recently discussed in Acorn newsgroups, you'll probably find a link to it from here.

David Ramsden's Acorn Pages
http://www.teletec.u-net.com/acorn/

Perly kings

Perl is an interpreted language for scanning and extracting information from text files and also lends itself to many system management tasks. It is the workhorse of Web server-run CGI (Common Gateway Interface) scripts and its syntax will be familiar to C programmers.

There are various versions for Acorn Risc OS, but reportedly the newest and best port is by Nick Clark. There's also an Acorn Perl mailing list moderated by another Perly king, Andrew Black at adb@bach.demon.co.uk.

Perl v5.005 Risc OS port v1.11
http://www.unfortu.net/pub/flirble/users/nick/P/

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to comms@acornuser.com, or mail #2 on Arcade BBS 0181 654 2212.

public domain

Gearing up

A number of 3D engines have been under development for StrongARM powered Risc PCs for some time now, but unfortunately this hasn't produced much in the way of quality game releases. As a further incentive to Acorn development, Martin Piper has released a basic 3D engine into the Public Domain, and it's well worth a look for aspiring games coders. I've long been somewhat dubious of Martin's rather over-hyped releases as readers of the acorn newsgroups will no doubt be aware, but I have to admit that this is a welcome release from the TBA clan.

Currently it includes complete C and Assembler source code and a few little demos as a taster of what the engine can do. It should be noted however that this is not the TAG engine, which is still owned by TBA. As it stands the engine does all the core jobs you'd expect of a working 3D engine. Matrix maths, culling, clipping and a varied array of rendering styles are all supported. While it's not an optimal engine it isn't bad for a PD development kit that you can download, and more importantly, use for free.

Following the original release by Martin, Robin Watts has taken up the challenge of developing it further by adding extra features and essential optimisations. The engine's PD status means that any other coders can get involved and add or improve the engine and re-release the changes for all the other users. I really hope this leads to a lot of further development, and of course ultimately more 3D games. With the main 3D work out of the way, there's a lot of potential for simple but playable 3D games that could be released as PD or Shareware. The potential is there, it's just down to some of you to get involved. The engine can be downloaded from http://www.tba-software.co.uk





VGB

The dominance of the aged Sony Playstation has left games giant Nintendo to rely heavily on markets outside the scope of its N64, and the continued success of the handheld Gameboy has led to the recent release of a colour version of this massively popular games platform. Hot on the heels of Nintendo's release of the Colour Gameboy is an emulator for the Acorn. The jury is currently out on the quality and value of the recent spate of foreign emulators appearing on the Acorn.

The emulators instantly open up support for a massive array of games, while at the same time opening the doors to mass software piracy. Many emulators have been ported from the PC with little attention to ARM optimisation and many people are sceptical of the emulation speeds compared with the PC. *VGB* is the latest of these emulators and whichever camp you come from, you have to admit an interest in seeing how these games perform. With Gameboy carts often taking half of the slots of the Japanese computer games top 10, there really must be something in it. *VGB* is on the net at http:www.cybervillage.co.uk/acorn/emulation/gameboy/index.html

Right-able

WritableUtils is a simple but very handy patch from Richard van der Hoff. The main patch is to allow keys to be remapped under the desktop. Essentially this means you can tell the End key to function as a 'delete right' button. For once, the non-Acorn method is a more usable, and this program allows you to implement it.

Although many applications let you do this within their own scope, WritableUtils allows it in general desktop use like in writable icons. Very, very useful. On top of that, the patch provides a simple interface to the global clipboard. I've not had chance to test this gem for long, so expect more comment next month. WritableUtils version 0.23 is on the web at http://www.jesus.cam.ac.uk/~rav21/writable

AudioBump

AudioBmps and *AudioBmpN* are a couple of pre-release effects from Michael Kübel's forthcoming *AudioBump* application. The idea is to provide real-time graphical effects linked to the sound, and although there's obviously some technical skill involved in these effects, there's little design thought. Both seemingly jerk around the screen pretty randomly and don't look particularly pretty. A lot of extra work needs to go into developing effects that work well with the music rather than just tagging code onto the sound outputs. Hopefully the full release will be a big improvement.

AltTab

AltTab, the popular task-swapper from Christopher Martin has now reached version 0.19 with an array of bug fixes. *AltTab* reproduces Win95's ability to toggle through the tasks running on your desktop via a few quick hot-key presses, and bring a different task to the front of the window stack. It can be found on Arcade BBS.

Recommended PD Libraries

- APDL, 39 Knighton Park Rd, Sydenham, London SE26 5RN
- ARM Club PD Library, Freepost ND6573, London N12 0BR
- Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ

Beebit

At a time when flashy 3D graphics and little gameplay are the key features in most console or PC games nowadays, its nice to go back to the days of 8-bit playability courtesy of a computer emulator. A new one on the scene is Michael Foot's *Beebit*. It's still at an early stage of development, but can emulate such delights as the original *Elite* and will be developed much more in the future. BBC emulation is a surprisingly popular pastime even for those who no longer follow the Acorn path, and you can obtain arc'ed game images on several web sites on the net. Beebit is on Mike's web site at http://www.voyager.co.nz/~mikef

Chaos

Ian Truskett has put together a well produced high score table editor for the classic arcade game, *Spheres of Chaos*. The program comes complete with example files, hints and tips as well as source code and file format details. But I'm forced to ask what the need for all this work actually is? Ian claims he wrote the program as a result of *Chaos'* tendency to crash without warning, especially when you're just about to enter your high score. I have to say I've never had that problem but for those of you out there that do, *ChaosHS* might just be what you were looking for. You can locate *ChaosHS* on the web at http://koschei.shada.com/

Frobnicate

Issue 18 of the excellent Frobnicate webzine is now available online at http://www.heyrick.co.uk/frobnicate and includes such features as club guides, the dictionary of computing, Ovation Pro coverage and all the usuals. Of particular interest this month is the FrobAwards voting form which lets you vote for your favourite and most hated program, magazine and person of the year. With Stan Boland and Peter Bondar side by side in the 'person' ratings its going to be somewhat amusing (if predictable) to see the results.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to pdpage@acornuser.com

NoDisc

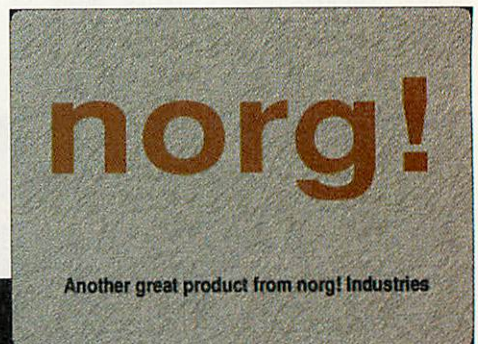
Back in the early days of the Archimedes, disk copying programs that were blatantly designed to make pirate copies of commercial games were two-a-penny. Programs like *PiRat* were distributed as PD with little fuss. All of which is rather ironic as the recent release of StrongARM game-enabling software has caused quite a bit of uproar on the newsgroups.

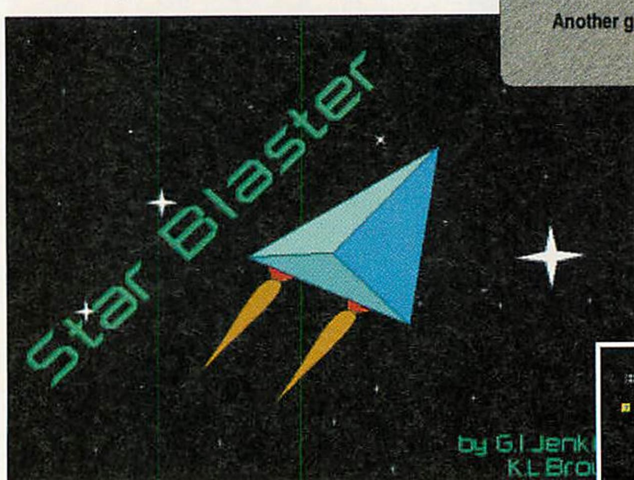
As it turns out, the new *NoDisc* application is designed to get round the software protection on old 4D games in order that they can run on the Risc PC. The program is able to remove StrongARM incompatible encryption and the necessity for key disks. This does in theory allow software piracy, but it also allows legitimate users to get more use out of their classic games. With the current situation in the Acorn games market I think most users can understand both the damaging effect of software piracy as well as the need to rely on the back catalogue of Acorn games. *NoDisc* can be found on the web at http://www.wilsontigger.demon.co.uk

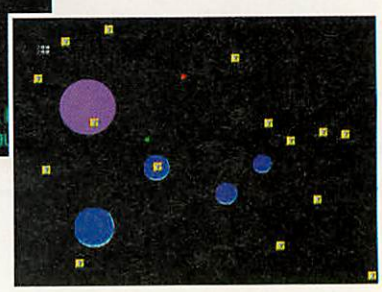
Blast it

Blast reminds me of a classic multi-player shooting game way back on the BBC B. Each player had an Asteroids-style spaceship to fly around the screen with, and the object was to shoot the other player – rather like *Spheres of Chaos* with an 'Enemies' game type set. However, Blast features up to four players, serial link support and joystick support not to mention a complete planet and gravity simulation.

Unfortunately it just doesn't play very well and the graphics are appalling. The game idea has a lot of potential, but this implementation needs a lot more work to make it worth the £8 registration fee. *Blast* is on the web at http://www.neutralino.demon.co.uk/







Draw-Plug

DrawPlugIn is a patch by coder Justin Fletcher that provides Draw support on web pages. As Justin admits, it's a very rudimentary plugin designed to display a library of drawfile clip-art on his web pages, but it certainly does the job. Obviously this is of limited use, as anyone without an Acorn machine won't be able to view the draw objects and anyone that does, needs to have the patch installed to view them.

For very specific jobs this may be rather useful however, and it should be remembered that Cerilica's new vector design package, *Vantage*, is based heavily on the Drawfile format. A resurgence of Drawfile use and publicity is definitely on the way. Check Justin's web site at http://www.thevillage.ndirect.co.uk/justin/

The making of the Acorn auction

The Great Acorn Auction in aid of Comic Relief was dreamt up just after getting off the telephone to Dave Clare moments after Acorn announced the death of Phoebe, workstations and all that we hold dear. An instant response, let's do something fun.

I've been involved with fundraising for Comic Relief since it's inception way back in the mid-1980's, but with the 1999 appeal just around the corner it seemed a fitting idea that we (as a user community) should show the rest of the jaded PC-owning UK that even though we had just been treated like dirt, we could still raise a huge wodge of dosh and have fun as well.

I devised a plan, a cunning plan, nay, a plan which was so cunning that it could have been awarded an honorary doctorate at the University of Cunning. The plan was simple: Ask as many Acorn companies to donate something and auction it off over the Internet and also through the network of Acorn magazines. I knew this plan may not work as, to most companies, I was a complete unknown and therefore a very large risk. There would be no point in approaching (say) Computer Concepts and asking them to donate as a first port of call. This would not be too large a problem.

I started with companies who knew me either personally, or as a customer (or both). The first to be asked were *Acorn User*, Clares Micro Supplies, *Archive* and the Really Good Software Company. All four responded well – RGSC especially (donating 17 pieces of software). After this initial success, I blanket-mailed around 20 Acorn related companies. Quite a number responded (Acorn didn't).

Advertising was next. With help from Steve Turnbull and Paul Beverley, a full page advert was placed to run in every edition of *Acorn User* and *Archive* until March 1999. This may not seem much, but consider this, how much would a full page advert for six months put you back? I knocked up the original website in under 45 minutes using *!HTML3* and tested on *!Fresco*. I had originally intended to use a small Java ticker tape applet to read everything from a text file which would make updating the website very simple, but it didn't work.

With placing the adverts in the Acorn press and on the comp.sys.acorn. announce newsgroup, the bids started to roll in. Within three weeks from the launch (mid-October 1998), over £600 had been pledged. The special edition joystick from Stuart Tyrrell Developments was causing the most interest with people outbidding each other within minutes of the site being updated.

I could not rest upon my laurels. The key to any marketing strategy is to keep badgering people for more. I couldn't ask for more from the companies already donating, so I tried elsewhere. Elsewhere in this case was Computer Concepts and Pineapple Software.

The Internet is a great innovation. Without it, most of the companies approached would not have heard of the auction. I approached CC thinking I may get a copy of *!CFS* and *!MacFS*. I did not expect *!Publisher+* and *!ArtWorks*. A coup indeed. Pineapple responded to my e-mail within twenty minutes with their *!Studio 24* Art package. This was great. "Let's have a go at some other companies".

This trying went on and as Christmas came closer, the bids slowed. From about £150 a week down to £20. And again something was needed. More software. So after Christmas (and the renewed optimism surrounding Acorn's announcement that RISC OS4 was to be released), I tried again. Icon Technology donated *!EasiWriter Pro*, Serious Statistical Software and Owl Art gave and Alternative Publishing donated another three copies of *!ImageFS2*.

The money then started rolling back in. At the present time (this article was written on the 20th January 1999), the total is standing at £930, just £70 from my target of a grand. With over a month to go until the closing date, this seems very attainable.

March 12th 1999 is the date for Comic Relief VII. On behalf of all those who have donated and the companies involved, a large cheque (in size and amount) will be presented to Comic Relief by myself and Steve Turnbull (*We might even get on TV! Ed.*). Keep on bidding, there is still time... AU

Dates for your Red Nose Calendar

3rd week Feb
Red Noses on sale

4th week Feb
Red Nose single released

Friday March 5th, 10pm
Internet auction closes

Saturday March 6th
Postal auction closes

Friday March 12th, 7pm
Comic Relief 7 begins on BBC TV

How to bid

Choose the software you're interested in. Contact me by e-mail or phone (details at the end). Make me an offer. For each initial bid for any piece of software, you must send me a cheque for £1, thereafter all bids on that piece of software are free.

A cut-down version of the website is on the Acorn User and Archive cover discs.

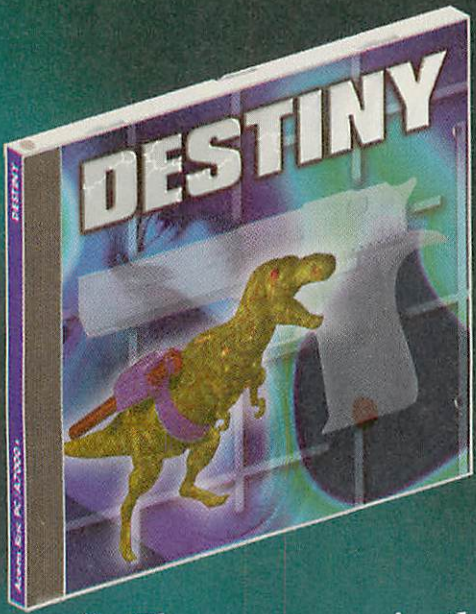
Contacting Paul F Johnson

E-mail Enquiries:
paul@physchem.freeserve.co.uk
Bids:
auction@physchem.freeserve.co.uk
Phone:
0161 295 4015 (day)
01744 600733 (all times)
Website:
http://www.acornusers.org/comicrelief/

Special Offer

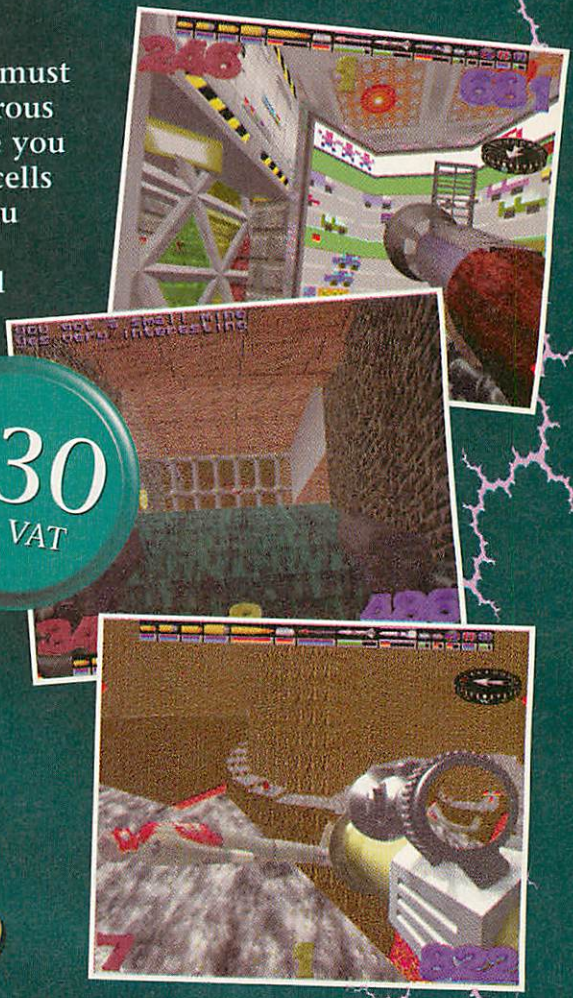
DESTINY

One of the most talked about Acorn games of 1998 is available now



Transported to an unknown world you must venture into a dangerous domain. Not only are you searching for power cells so you can return, you have to survive and battle against the evil denizens who are determined to kill you.

£30 inc VAT



"...The weaponry in this game is second to none, and outclasses Quake or Doom by a long way."
Acorn Arcade

"I would say that it is a good buy for all Risc PC owners"
Acorn Arcade

ORDER YOUR COPY NOW AND HAVE AN EXPLOSIVE 1999

ORDER FORM

YES! Please send me _____ copies of *Destiny* @ £30 each

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Rest of world, add £2

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Address ....

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Postcode .... E-mail ....

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- ☐ Credit Card (Visa/Barclaycard/Mastercard/Access)

Credit Card No: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry Date: ☐ / ☐

☐ Please tick here if you do not wish to receive promotional information from other companies AU9903

Send your order to: Destiny Offer, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP.

- *High resolution 3D graphics*
- *Huge varied levels*
- *Serious fire power*
- *Intelligent enemies*
- *Original music*
- *Configurable controls*

And much more never seen in any other game of this type on any other platform

Playable on A7000+, Risc PC 600 or better. StrongARM recommended. Requires CD-ROM drive, 10Mb RAM and 13Mb hard disc space minimum.

Easier than you think

This is the first of a short series on the benefits of setting up your own company and working for yourself. It is based on my personal experience but professional advice never hurt anyone except in the wallet or purse. The series may not appear to have immediate relevance to Acorn users but read on.

It could be said that the reason why there are not as many businesses that use Acorns is that not many Acorn users run businesses. I am not talking about a company buying or selling computers or software or even peripherals but doing something else – like being a computer contractor for example. If you have used a computer, perhaps gained some qualification or expertise or are working as a paid employee using computers then you should consider carefully the benefits of striking out alone. There are risks, particularly if you need to raise large amounts of capital but to become a contractor need not involve such high financial risks.

For a start you will be selling your skills: you can create web pages or program, you can manage projects or Head a commercial IT department or sell or any of the other myriad things that the average person does without thinking about it. Let's start to think about it: most of us undervalue ourselves and our hard-won skills. The first thing to do is to write a comprehensive CV (curriculum vitae) and list your skill set. You may think it is largely Acorn-based and therefore of little commercial value – but that's not the case. Skills are often transferrable – if you can program a RISC OS machine it proves you have the ability to gain skills. Most modern computer languages are not platform dependent anyway.

The second thing to do is to send your completed CV to as many agencies specialising in computer contractors as possible. Your comprehensive CV should be not more that one page – you may need professional advice on this. E-mail or fax is the preferred method but snail mail is acceptable. Beware if you use e-mail as no agency I know can read anything other than Microsoft *Word* documents.

Thus far you have risked nothing. If you are working continue as normal, if not it can hardly affect your Jobseekers Allowance can it? Be prepared to wait and in the meantime refine your search by taking a couple of the Weekly Trade papers for the IT industry – almost everything is PC or mainframe-based but you will be working in a skills shortage area, particularly while Year 2000 and the EMU soak up large numbers of other contractors.

If you need areas to concentrate on I have noticed a recent upsurge in employers requiring Novell Netware skills and the same can be said for *Windows NT.*

In the next article I intend to concentrate on what to do when offered a contract and how to set up your own company – and of course how your Acorn computer can help you to run it.

Need a holiday?

As part of our occasional series on businesses which use RISC OS computers here is yet another run by Russell Hafter:

"Russell Hafter Holidays is a specialist Tour Operator to Germany. Originally specialising in Walking Holidays we have, this year, started to offer self-drive holidays staying in what we call 'Idyllic Country Inns'. I started in 1985 using a BBC B, being also a full time teacher at that time. We upgraded to an A5000 when they came out, and bought a Risc PC at the end of last summer. The main reason for the upgrade was to be able to browse the Internet efficiently.

"Today I use Icon Technology's *!Easiwriter Pro* to produce our booklets of walking notes and other information, as well as forms for use in the office and general correspondence. Faxes, prepared in *!EasiWriter Pro*, are routinely sent from the desktop using a Pace V34plus modem and *!ArcFax*.

"I also use a Viewdata Emulator from David Pilling to book ferry crossings and flights online – which was actually easier on the BBC B with proper Viewdata facilities.

"*!Pipedream 4* is used to produce booking confirmations as it can do all the price and date calculations I need. I have to admit that I do not really like the program interface, but it does the job – I do not know of anything else that can.

"In my opinion what Acorn always lacked was a decent, cheap, integrated package along the lines of Claris *!Works*. If there had been an Acorn version, with drag and drop editing...

"Accounts are done using *Quicken 6* for DOS on the PC side – this actually runs OK on the PC emulator, the one advantage of *Win95* seeming to be that when Quicken is run under *Win95* it understands dates in the next millennium. Under *Win3.1* (on the 486 PC card in the A5000 it does not)."

Russell Hafter Holidays, 26 The Square, Ashfield, DUNBLANE, Great Britain, FK15 0JN. E-mail: rhh@argonet.co.uk Tel: (+44/0) 1786 824515 Fax: (+44/0) 1786 824515.

A new prophet

A new version of Prophet will be launched provisionally in mid-February called *!Prophet3Pro.* Apart from a multitude of small additions it will feature a new reporting section which will produce a full set of double-entry reports. In short, this should reduce the fees an accountant will charge to verify a set of accounts. This feature also includes an extended trouble-shooting report which will help track down errors. The upgrade to existing users will cost £49 inclusive and will include a supplementary manual and new disc.

Apricote Studios
Tel: 01354 680432

New EasiWriter

The newest version of the very popular and versatile *!EasiWriter* from Icon Technology – version 5.00 features:

- Can read Impression DDF files (text with style mark-up) – pictures need to be imported separately.
- Can split large documents into smaller HTML files generating a linked contents page and linking the pages together by adding Top, Bottom, Next, Previous and Contents links as appropriate.
- Rename, delete and search for Styles. Mail-merge now can now include Picture fields – ideal for personalised school reports.

Icon Technology
http://www.icontechnology.net
e-mail: mike@iconsupport.demon.co.uk

Integration

Some recent correspondents and Russell Halfter, featured elsewhere on this page, bemoan the fact that the Acorn range has never had a good integrated package – I think it depends on how you define good and integrated. We may never have the equivalent of Lotus *Smartsuite* or *Microsoft Office* and some might say we should therefore count our blessings.

However, there was a very good package called Acorn *!Advance* which some suppliers are offering at half its original selling price, around £50-£60.

Advance offers a cut-down version of *!Impression, !Schema* and *!DataPower* with a high degree of integration. The original package featured a truly awful method of software protection but this was dropped on later versions of which there was one.

If you do require a package with integration, an excellent manual and a big box you could do a lot worse than consider a copy of *!Advance.* I suggest ringing round a few dealers.

PEOPLE SAY IT'S *the* FUTURE

WE SAY IT'S JUST *the* BEGINNING

INTRODUCING CERILICA VANTAGE

...the ultimate RISC OS design and publishing package

Don't take our word for it. Just ask somebody like Ian Burley, News Editor for Acorn User; "...a potentially world beating software package exclusively for the RISC OS platform." And that was his reaction after only witnessing a demonstration of an early Beta test copy last year.

Much has been said about **Cerilica Vantage** over the past year of its development. But it isn't words that makes this package the talk of the platform, rather its dazzling power and level of professionalism all coupled with an uncanny ease of use.

Conceived from a design *and* publishing background, the ingredients of this software are pure. More focused than any competition to the tasks that will be required of it, the result is a nirvana for both amateur and professional fellow designers and publishers.

With a feature list as comprehensive as **Cerilica Vantage** has, it hardly does it justice to show just an extract of a list. Nevertheless, for the first time RISC OS users are now within grasp of features commonly taken for granted on PCs *and more*!

Take, as an example, its ability to read and write common file formats found both on PCs, Macs and RISC OS. Then once you've got your work loaded on your preferred system you can add all the effects that you wanted such as transparencies.

But to say that **Cerilica Vantage** can just process your design work would be a very large understatement. For a start you would have to take into account one of the most highly-tuned path and shape creators and editors. Or its technically brilliant colour management system, *TRUISM II*, which gives full screen colour ink simulation — a rare and highly prized feature on *any* platform.

Delving deeper will reveal all the features that you will soon never know how you lived without; full *PostScript*® control, advanced fill types, dynamic clipping, comprehensive sprite and text handling, multi-page capability and even interactive support. You see, we could go on for much longer than this advert would allow us. Oh, and there is the not-so-trivial matter of continuous development and professional support.

A world beating package? We think so...

Cerilica

http://www.cerilica.com/
Telephone: (01989) 567350

cover disc

Icons

This directory contains two utility programs and a selection of replacement icons, both for the desktop and for *!Voyager*.

The first program, *!Sprites1* by David McCormack, provides a means by which you can install all your customised icons. The second program, *AddSprites* by Andrew Clover of DoggySoft, prevents the computer over writing these replacement sprites every time you load a new program.

!Sprites1

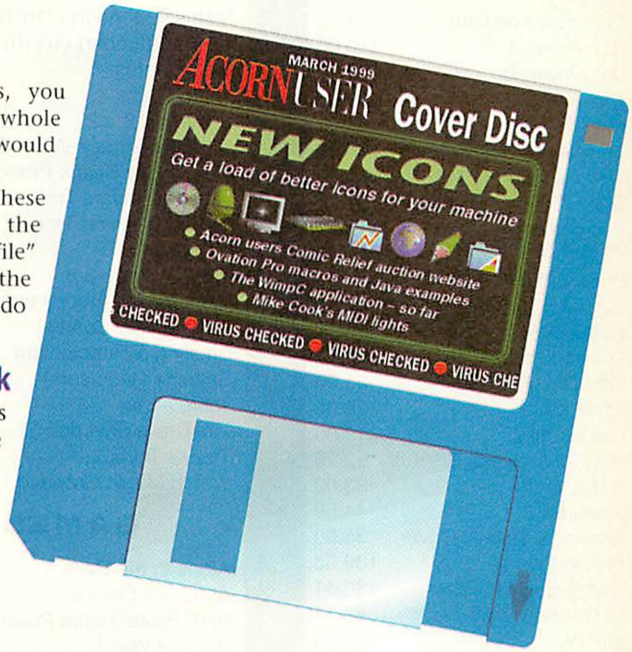
Adding your sprites to the replacement set is very simple. Shift-select on *!Sprites1* to open it up, then load *!sprites22* into *!Paint*. Just drop your new icons in, give them the appropriate names then save the file. To view the changes run *!Sprites1*.

The list of file names can be found in the text file *Filetypes* on the disc. Alternatively see the file *Resources:$.Resources.Wimp.Sprites22* for the default set of desktop icons.

AddSprites

If you have designed your own sprites, or use a desktop new-look program such as *!NewerLook*, you will no doubt be a bit miffed when an application replaces your lovely 3D, high-res icons with its own. After all, if you liked their icons, you wouldn't have spent the whole weekend re-designing them would you?

This module fixes these problems. It intercepts the OS_SpriteOp "merge sprites file" call, and alters the action of the SWI action to ensure new icons do not replace old ones.



Getting the thing to work

This is how I have the programs set up on my computer, please feel free to comment if you find a better way. Within *!Boot.Choices. Desktop* I have placed two command lines:

```
Run ADFS::HardDisc4.
$.Utils.Inboot.icons.RunIt

Run ADFS::HardDisc4.$.Utils.
Inboot.!Sprites1
```

This runs both programs on boot-up, on my machine they are located in the directory *HardDisc4.$.Utils.Inboot*

By using both these programs together, it will do away with the tiresome task of replacing every desktop sprite within every program you have (see Mike Cook's Rambles on Page 74).

Two final points: Firstly, some of the replacement icons provided are 32k sprites, on a 256 display these will need running though *!ChangeFSI* or *!InterGif* before they look as they should.

Secondly, not all the replacement icons provided were born on my desktop, one or two have been collected over the years and the original authors names forgotten – sorry!

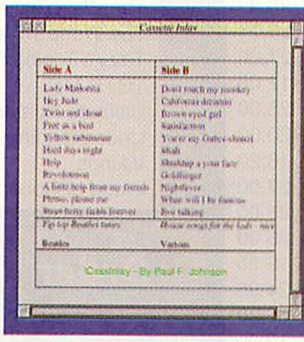
For more icons visit http://www.argonet.co.uk/users/dunstan/



!KwikJpeg

The first offering from Paul F. Johnson this month is a very neat little JPEG viewer. At 34k it's less than half the size of *!SwiftJPEG*, something worth considering for those people who're short in the memory department.

This is a straightforward viewer with none of *!SwiftJPEG's* choices or display features, but with similar loading speeds.



!CassInlay

Paul's second effort is a cassette inlay card designer. It allows you enter up to 24 tracks per cassette and then to specify title and artist for each side. These details can then be printed out. Updating the lists is no problem as files can be saved and altered at a later date.

One word of advice, I found that having entered tracks or titles the window needed to be closed, then opened again to effect the changes.

Disc information

The software on the cover disc has been compressed using !ArcFS 2 from VTi, and are opened by running a copy of ArcFS then double-clicking on the archive to open it. There is a copy of !ArcFS on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover discs have been checked for viruses using !Killer version 3.001 from Pineapple Software.

Freeware

- *!KwikJpeg* fast JPEG viewer
- *!CassInlay* cassette inlay card designer
- *!Sprites1* overwrite desktop icons with your own
- *AddSprites* ensure your new icons stay put

Regular & Features

- Red Nose Day Auction web site
- Mike Cook's MIDI to Lights files
- Wimp C development program
- All the *INFO programs

Spellbinding?

Surf the Web with the latest Internet-ready Risc PC, packaged by Castle Technology and explored by **Mike Williams**

The shock announcement last September that Acorn's Risc PC 2 (known as Phoebe) was to be cancelled sent shockwaves through the Acorn community. Since then various proposals, some of which have fallen by the wayside, have appeared. Early on the scene was well known Acorn dealer Castle Technology who negotiated a deal with Acorn to become the official distributor of all Acorn desktop products (the StrongARM Risc PC, the A7000+ and the network computer). Since the deal was signed in October of last year, Castle Technology Ltd (CTL) has been busy revising the Acorn dealer network, setting up distribution channels and seeking ways of promoting the strengths of the Acorn platform.

A key feature to the CTL strategy is 'added value', bundling additional software and/or hardware in with the basic computer to provide an attractive packaged system. So far CTL has identified three such systems, the Web Wizard based on the latest StrongARM Risc PC, the Peak Performer focusing on the A7000+, and the Sprinter which is how CTL are promoting Acorn's network computer.

While many Acorn users already own a Risc PC, there are plenty of others with A5000s or older machines who had been contemplating upgrading to Phoebe. For such users the most recent version of the Risc PC still offers a first-rate machine which will significantly boost performance compared with those older machines. Remember too that the StrongARM processor on its own provided earlier Risc PCs (the 600 and the 700) with a very obvious speed improvement when it was fitted as an upgrade. With the possibilities of future release of RISC OS 4 for existing machines, and rumours of potential hardware upgrades, the Risc PC in the guise of the Web Wizard still has much going for it.

The purpose of this feature is to take a detailed look at the Web Wizard and what it provides, for those who may wish to upgrade from older Acorn systems, and for existing Risc PC users who might well be surprised at what the Web Wizard can do.



The basic system

The Web Wizard consists of a single box 355mm wide, 383mm deep and 117mm high. This is in the unique Risc PC style with a bottom tray housing the motherboard, power supply and internal hard disc drive (Fujitsu). On top of this is a single slice containing a floppy disc drive (HD) and a 24x CD-ROM drive (Sony), followed by the easily secured lid.

The internal hard drive as currently fitted provides 2Gb of storage – higher capacity drives can be fitted as an alternative. There is 32Mb of RAM on a single memory card, leaving one SIMM slot free for further expansion plus 2Mb of video RAM fitted. The StrongARM processor which runs at a fast 233MHz is mounted on a separate processor card, and there is a second slot for fitting a PC card (not included).

The usual range of external connectors (on the rear of the machine) provides bi-directional parallel port (for printer and other devices), serial port, connectors for mouse, keyboard and monitor, and stereo audio jack socket. There is also space to fit a dedicated Ethernet network card if required. Internally a backplane is fitted as standard which allows up to two Acorn-style expansion cards to be fitted to the machine.

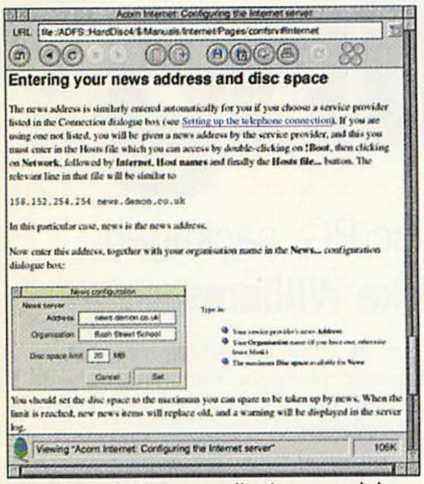
Extra hardware

That is all standard as far as a Risc PC is concerned, but CTL include two other pieces of kit when you buy a Web Wizard. There are miniature Firestorm-brand external speakers (model SP-230) providing power amplification to 80W. It is certainly good from a marketing point of view to see that speakers are now included with Acorn computers, as they have long been a standard component of many PC systems.

External speakers may be less than essential to many Acorn users, but the other item of hardware which CTL provide with the Web Wizard could almost be deemed mandatory these days. This is a fast 56K external modem, and it comes as no surprise therefore to know that the Web Wizard is Internet ready. The modem (branded Incomm) is a small black Hayes compatible unit. Like many such modems it works off a separate power supply (included) and there are cables for connecting the modem to a suitable telephone socket, and to the serial port on the back of the computer. One minor criticism is that the second 'phone' socket on the modem uses a non-British style of socket, but it is easy enough to buy an adaptor which will allow your modem and telephone to be plugged into the same main socket.

The 56K modem operates at what is currently the fastest available speed over a dial-up telephone line, and you will soon come to appreciate this for extensive Internet access. The Web Wizard comes with appropriate Internet software pre-loaded.

The monitor supplied with the Web Wizard is a 15in model manufactured in



Using Acorn's *!Browse* application to read the online manuals, here the *Internet User Guide*

China by a company called XIOD. According to the specification it has a dot pitch of 0.28mm and a maximum refresh rate of 87Hz. The instructions accompanying the monitor indicated that it is capable of supporting a maximum resolution of 1280x1024 pixels but this could not be obtained from the monitor set-ups included in the Configuration table as defaults. CTL say that the refresh rate associated with this setting uses interlace and results in very noticeable flicker.

With 2Mb of video RAM the Web Wizard can display up to 16 million colours in an 800x600 screen mode. There was some screen flicker to my eye in this mode (compared with the same mode on my AK85 17" monitor) but the display was rock steady in all other modes. The monitor controls are quite easy to use too, with function selector buttons, and increase/decrease buttons. So you select the screen function to adjust, then make the adjustment with + and – buttons. Unlike Acorn monitors, the power cable to this one must be plugged into a separate power socket, so you lose the minor convenience of having a single switch which controls both computer and monitor as is otherwise standard with the Risc PC and Acorn monitor.

The *Welcome Guide* supplied with the Web Wizard is the standard Acorn 1996 edition. This does not cover third party devices like the speakers, modem and monitor which CTL bundle in with the system. A few printed notes for Acorn users would help out here, and this is something which CTL say they will very probably provide once systems start shipping out to dealers.

The software

The Web Wizard is supplied with RISC OS 3.71 and provides all the familiar desktop functions plus applications like *!Paint*, *!Draw* and *!Edit* which make Acorn systems such an easy yet powerful machines to use. In this version of RISC OS many of the Acorn-supplied applications including *!Printers* are in ROM for almost instant access. Some earlier versions of RISC OS kept many of these applications on the hard disc. Apart from speed of access, ROM-based applications cannot be corrupted or accidentally deleted. Since much of this will be familiar to all Acorn users we will concentrate on the extra software.

Additional software has come from three different sources. Acorn were developing extensive Internet-related software, and the latest versions of this (as at the time the Acorn Workstations division was closed down) are installed ready to use on the hard disc. *!Browse* is Acorn's web browser and is particularly important, not only for browsing web



The Peak Performer

sites, but also for reading additional documentation in the form of HTML files which supplement the *Welcome Guide*. The Internet software also includes *!Connect* which controls connection to your ISP, and *!Mail* which you would use for reading e-mail and newsgroup postings downloaded using *!Connect*.

Two other important applications for web users are *!Java* and *!Shockwave*. Java is a platform-independent programming language allowing web sites to provide functions which are automat-



The 56Kflex modem bundled in the Web Wizard package

ically downloaded via a web browser and run on your machine, provided it has Java installed. That's what the Acorn *!Java* application does.

Another growing feature of web pages is the inclusion of 'movies' created by Macromedia *Director*. *Shockwave* is the corresponding 'player' which allows these movies to be played on your machine, and Acorn has implemented this for RISC OS. But it will only play Director 4 files which you are very unlikely to find on the Web these days.

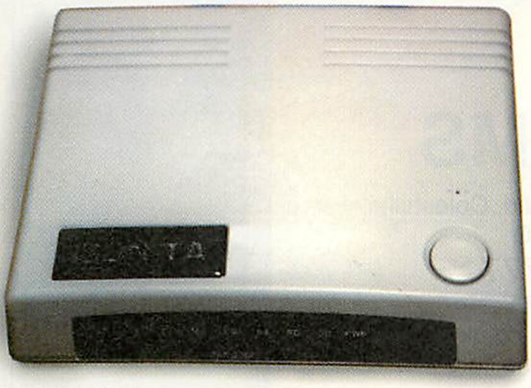
In addition to the Internet software Acorn's *!OmniClient* networking software is also installed on the hard disc. This not only links Acorn systems but allows a network to be shared with other platforms.

An excellent way to familiarise yourself with the web browser is to use it to read the extensive documentation provided in HTML format. There are four manuals in this form, the *RISC OS User Guide*, the *Internet User Guide*, the *OmniClient User Guide* and the *TimeCode User Guide*. The latter describes Acorn's TimeCode system allowing time-based data like video, audio and animations to be synchronised. As well as the TimeCode system itself there are a number of TimeCode demonstrations included.

Getting online

There is much which makes this Risc PC Internet-ready, but good as the Acorn software is you still need to find a host ISP and configure the software to work with it. So what CTL have done is to negotiate a deal with Argonet whereby the Web Wizard comes with Argonet's *!Voyager* software and one month's free trial Internet access. Registering and accessing the Internet this way is extremely easy.

You just open a directory entitled *GetOnline* and the software takes you through a simple process, recording your details, going online to Argonet and registering you with an account. Within five minutes you can be surfing the Web along with the rest of them. While the fact that you can so easily get online is to be applauded, again there is at present insufficient information for new users to adequately understand and exploit all the facilities *!Voyager* has to offer. As well



Example of an ISDN modem which CTL can supply as an alternative to the default 56K unit

as *!Voyager* the Web Wizard also comes with an extensive collection of pages from Argosphere, Argonet's large educational web site.

High speed Internet access

As an alternative to the 56K modem bundled into the Web Wizard package CTL are offering an alternative route for those who are perhaps more serious about their Internet usage. For just £50 more you can opt for an ISDN modem. Because this is also Hayes-compatible CTL have been able to write a driver which allows this type of modem to be used with your Acorn system.

ISDN lines are high-speed digital connections increasingly being used by business and industry. Until recently the cost was quite high, but last autumn BT introduced Home Highway (see review in the February issue of *Acorn User*). With the installation of a Home Highway box in your home your existing analogue line is divided into two lines, both of which can be used as normal analogue lines or high speed 64K digital lines. By combining two digital lines together you can access the Internet at a blistering 128K, or use a fast 64K connection and still keep one line open for normal voice calls.

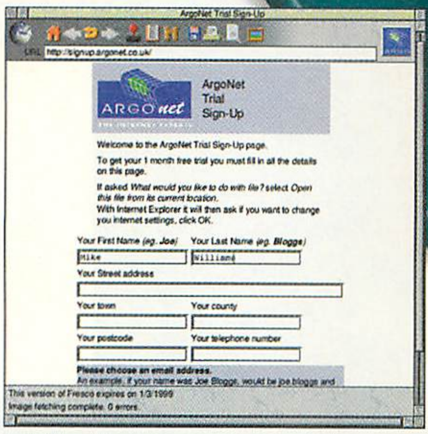
The Microsoft way

Another significant software application supplied as standard on the Web Wizard comes in the form of *!EasiWriter Pro* from Icon Technology. *!EasiWriter Pro* is a fully featured word processor which can also read and write documents in Microsoft *Word* 6 and 7 formats, as well as its own proprietary file format, and as text and Draw files. Moreover, *!EasiWriter Pro* can output documents in HTML format so providing the means for you to create and edit your own web pages.

This is version 4.08 of *!EasiWriter Pro*, and version 5 (or later) which has *Word* 8 compatibility is a simple upgrade from Icon Technology. Thus the Web Wizard not only has full Internet capability but is very much *Word* compatible for communi-cation with other platforms.

Other CTL packages

While the Web Wizard is the most powerful and flexible Acorn system currently available it is not the only model. CTL have also taken Acorn's A7000+ and packaged this as their Peak Performer. It comes with the integrated ARM 7500FE processor, including floating point accelerator, 8Mb of RAM (and up to a further 128Mb RAM in a single EDO SIMM socket), 2Gb hard drive and 32x CD-ROM drive. It is supplied with a 14" monitor and miniature 80W speakers for just £749 ex. VAT.



Installing *!Voyager* on your system takes very little time and immediately gets you connected to the Internet

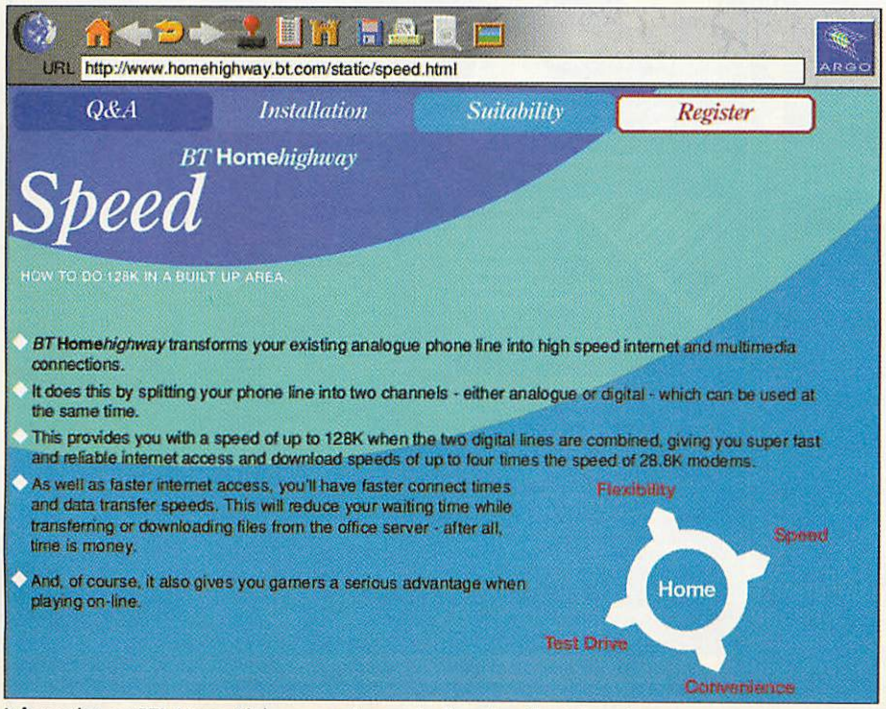
There is also the Sprinter, aimed primarily at the educational market, and based on the Acorn network computer. This is priced at just £379 excluding VAT including NC, keyboard, mouse and 14" monitor. However, before you rush out to buy one, remember that it has to be connected to a network server. Nevertheless, the Sprinter is the lowest cost solution to providing computers in schools, and it can run both RISC OS and *Windows* applications.

Summary

At just £1149 the Web Wizard really does seem to be a bargain. It has all the power for which the StrongARM processor is renowned, has all the latest Acorn Internet software, comes Internet-ready courtesy of Argonet, and provides invaluable compatibility with Microsoft *Word* through Icon Technology's *!EasiWriter Pro*.

If you have an older Acorn system I really do think you would be quite amazed at the improvement in performance this latest Risc PC provides, particularly if you are into image processing or desktop publishing. With the Web Wizard your productivity will soar.

Indeed, the Web Wizard seemed distinctly superior in performance to my trusty and much upgraded Risc PC 600, despite its StrongARM processor, while it was a revelation to see how far Acorn's Internet software had progressed. Given the prospects for a future release of RISC OS 4, and enhanced motherboards from third parties, The Web Wizard is as forward looking as the Risc PC has ever been. AU



Information on BT's Home Highway service can be found on the Internet

Information

Telephoning 0870 240 8080 will automatically connect you to your local Acorn Centre of Technology who will be please to answer your questions.

Good service

David Matthewman and Jill Regan travel to Orpington to visit Atomwide

Martin Coulson has a dream. One day, he'd like to become the IT Manager at a school – the sort of school with the money to afford a decent computer system. He'd set it up just how he wanted, fine tuning it until it was running perfectly, and then sit back and relax with about three computers administering it. It sounds like something of a pipedream, but if anyone knows what he's talking about when it comes to setting up networks, Martin does. He's currently the MD of Atomwide; networking specialists and long-time producers of Acorn hardware. But, as he confides, he started out in this market as a barrow boy (of sorts).

'I can remember going to an *Acorn User* show years and years ago at the Royal Horticultural Halls; I went in with a wheelbarrow full of loose memory chips,' Martin recalls. 'Originally the company concentrated on all the bits and peripherals. There was a period when that formed a very large part of Atomwide's market. I can remember doing stock checks and finding out that I had £60,000 worth of memory lying around at the end of the year.'

Atom-something

In those days, Atomwide sold mainly to customers who'd plug the products into their machines and forget about them. Once you've plugged it in, extra RAM doesn't fail very often, nor does it need constant nursing and attention to keep it running smoothly.

'It worked perfectly well as a box-shifty, here's-the-product, give-me-the-money business. It was a means to an end; nothing else. It didn't produce any kind of communication with the customer.'

ARM 3 upgrades and four-slot backplanes were Atomwide's first products. Martin bought Atomwide as an 'off the shelf' limited company – he had a choice of ten different names, all starting with 'Atom' – while he was still working at Chrysalis Records. He continued this for a while, working a seven-days-on, seven-days-off shift pattern with someone else, who managed a chain of fish and chip shops in Glasgow, when not working for Chrysalis. Eventually, though, Atomwide became too demanding, and Martin started running the company full-time.



Paul McKinnon, Sales and Marketing Manager

Networking

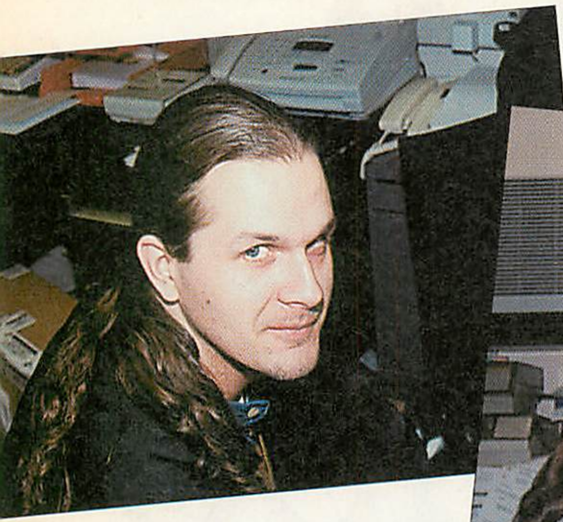
Among the first Atomwide products was an Ethernet card. For a while, Ethernet cards were just one of a wide range of hardware upgrades for Acorns. However, the past six or seven years has seen Atomwide increasingly finding its niche as a networking company. Ethernet cards are now at the heart of Atomwide's business; around them many other services have sprung up. Atomwide will advise on the best networking solution for a company or school, actually install the network, maintain it, and give training on keeping it running. The company also does consultancy work.

All of this constitutes Atomwide's main business at the moment. In fact, business is so healthy that even within this field Atomwide's managing to pick and choose a little about what work it does. It's also trying to move away from boring 'ten machines in a single room' installations towards more challenging multi-nodal networks.

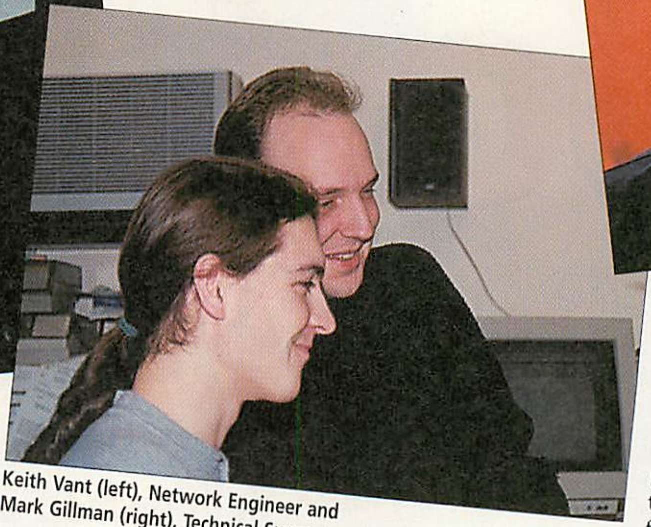
Some of the networks Atomwide builds are ambitious, to say the least. Take Winchester College, for instance. This network is spread over 23 buildings across Winchester, all connected with fibre-optics. Building a network like that, with several servers, multiple types of machines and switches all over the place requires thought and planning, but it's a very rewarding experience when it all works.

Mix and match

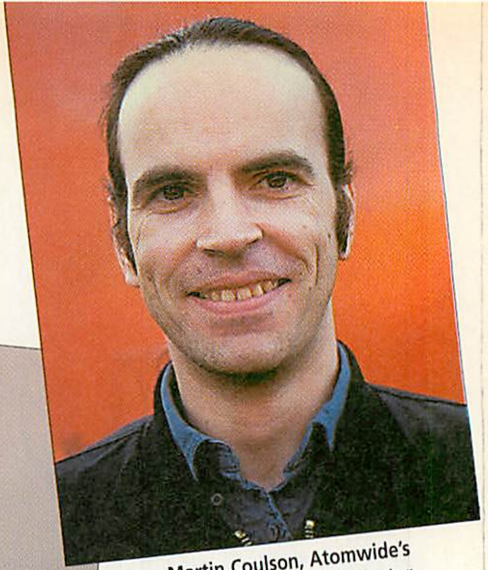
Atomwide started out as an Acorn company. It still is – it has a wide range of Acorn exclusive hardware and a staff full of Acorn fans – but the fact is that the call for an Acorn-only network solution these days is minimal. Atomwide has expertise in



Andy Williams, Network Engineer



Keith Vant (left), Network Engineer and Mark Gillman (right), Technical Support and R&D



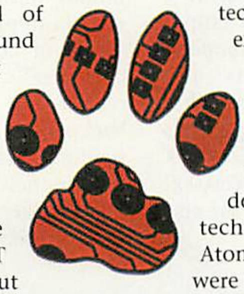
Martin Coulson, Atomwide's founder and Director

installing systems that mix Acorn, Apple and Intel platforms, which is increasingly what's needed these days (Unix, although popular in commercial networking, is rarely found in schools). It would be very unusual now for Atomwide to find a school that wanted an Acorn-only solution.

Martin reckons that nearly all of the systems Atomwide installs and maintains have a Windows NT server at the heart of them. There are a couple of Novell-based systems, which will probably be changed to NT in the near future. Of course, just having an NT server at the heart doesn't mean that there aren't Acorns on the network; there usually are. Worryingly though, it's often the older machines that are Acorns, with Atomwide networking a new room that is to be filled with PCs. Few people are actually buying new Acorns, although naturally there's more than one way of looking at this, as Martin points out.

'There are seven-, eight-, nine-year-old Acorns actually being used. There aren't seven-, eight-, nine-year-old PCs being used, except for propping doors open. So a school that already has loads of Acorn kit wants to continue using it. And there's no reason why you shouldn't keep using them. You can do 90% of what you want on the Acorns, it's only really in the area of interaction with software like *Microsoft Office* that you have problems.

'In fact in a lot of areas you're better set doing the work on an Acorn. But then you have the Microsoft and Intel adverts, which the board of governors sees, and so it's bound to go with the standard. Most of the time when you go into a school and there's loads of Acorns sitting around, you'll have the head and the bursar going: "PCs... PCs... PCs..." and the person in charge of IT muttering plaintively: "But these Acorns are really useful; we can do loads of things with them".'



In one of Atomwide's schools, for five- to eleven-year-olds, there's a room full of twenty networked PCs. This room is the flagship room that the head always shows the parents to impress them. The school also has two rooms full of Acorns. These rooms are the ones that are always booked, that the teachers are always fighting over, and that the kids want to go and use. There's a moral there somewhere, possibly that five-year-olds recognise good technology better than their parents do.

Paul joins the team

As you may have read in last month's Regan Files, in mid 1996 Paul McKinnon joined Atomwide from Cumana, bringing with him all his sales and marketing knowledge.

Paul also knew enough to leave the technical side of things to other, more experienced people at Atomwide:

'At Cumana I was Product Manager for a while and did a lot of product development,' Paul says, 'but at Atomwide as Sales and Marketing Manager I don't get involved in the technology. When I started at Atomwide I realised that these guys were all way ahead of me, in the technical stakes. There was no point in me trying to learn about networking to that degree. I know a reasonable amount about it, but not at the level of being able to manage an NT server or configure a router.

'I'd rather do what I think I'm quite good at, which is going and talking to customers and getting them to spend money. Or more to the point, getting them to spend enough money to let one of these guys walk in, and then getting them to spend a lot more.'

Paul is perfectly integrated into the company now. It's a bit unusual for a company that for so long has been identified firmly with one person – Martin Coulson – to allow someone else to become identified with it to the level that Paul now has, and it's a tribute to both Paul and Martin that it's happened. I suspect, though, that there was a little culture shock when Paul first joined.

The first thing Paul did was to insist that schools paid for the privilege of having Atomwide come and discuss the school's networking solution. In order to get an Atomwide engineer out of bed for the preliminary discussion, it will cost a school £500. That's £500 spent before a

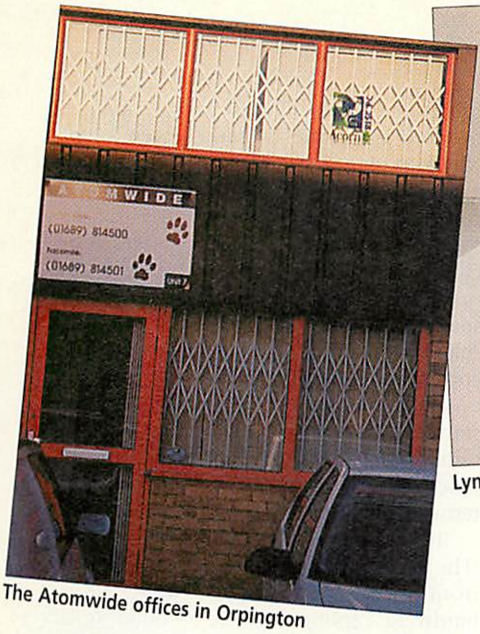
The three 'A's

The relationship between Atomwide, Aleph One and Ant Ltd has been a close one. The companies share stand space at shows, and have shared web space on their web site. Many of the Ant and Atomwide products are complementary: Atomwide's fast serial port card and the *Ant Internet Suite*, for instance. The back page advert on *Acorn User* for many years rotated between the companies.

This has caused many people, myself included, to often think of the three companies as effectively one big one with different 'faces'. But that's actually not the case; the three are totally separate companies and in fact these days are increasingly going their separate ways. The directors of the companies are all good friends, though, especially Alex van Someren of Ant Ltd and Martin Coulson, who are long-time drinking partners.

Martin first met Alex when he was working at Chrysalis records. They were introduced by Dave King, a graphic designer who knew them both, and thought they'd probably hit it off. They did, and collaborated on designing some hardware for Autocue television prompters, including a four slot backplane for an A310.

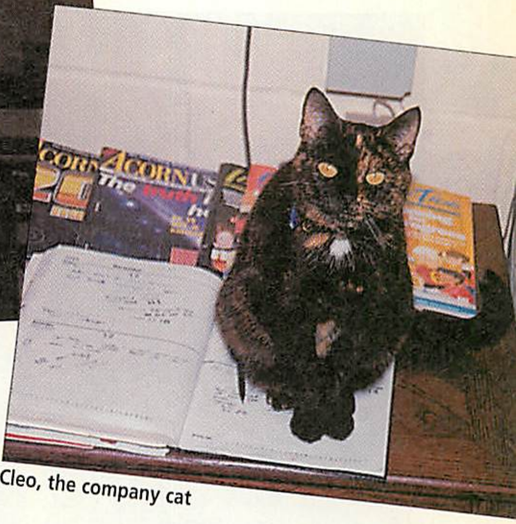
The sharing of stand space at shows and of server space on the web site both came about for financial reasons; it was simply cheaper that way. Naturally, given the friendship of the directors, the companies like to help each other out. Nonetheless, the three companies are separate, and each has its own identity, staff and product range.



The Atomwide offices in Orpington



Lynne Day, Administration Manager



Cleo, the company cat

single foot of cable has been laid.

At first sight, this looks a bit outrageous. Indeed, there were several schools who said so and doubtless went elsewhere. It was certainly a bold move on Paul's part, and it's easy to imagine that his reputation was somewhat riding on the outcome.

Custom reports

But as Paul points out, it makes sense. The school is getting the on-site attention of one of Atomwide's engineers for a couple of days, and then it will get a custom report written, detailing a networking solution tailored exactly to the school's needs. None of this comes cheap. By issuing an up-front charge, Atomwide is making clear its commitment to getting the groundwork right. The school's paying for a full report, and a full report is what it will get.

Too often, Atomwide had gone into a school, done the groundwork, only to find that the school actually went to someone else to install the network that Atomwide had designed. Worse, Atomwide was often called in a year later to fix or upgrade the network, only to find that it hadn't been installed properly at all. That was more work for Atomwide and unnecessary inconvenience for the school. Now that can still happen, of course, but at least Atomwide has made some money out of it.

Of course, if the school actually decides to use Atomwide to install the network, it's going to be spending the sorts of sums of money that make £500 look like a bargain. There is therefore a sense in which Atomwide's policy weeds out the schools that aren't serious enough about installing a network. In any case, Atomwide is run off its feet installing networks for schools that have paid the up-front charge, so it *was* a success, and Paul's a very popular person at Atomwide now.

Unrealistic expectations

School bursars and heads with unrealistic expectations of what a network's going to give them are a recurring theme for Martin. I suspect that in the mythical school where he will be the IT manager, he'll have a head and bursar to whom he can say: 'No, it's going to be *that* way, and it will cost you *this much*.' But then, Martin will be choosing the school very carefully; most IT managers aren't so lucky.

'The commercial avenues have no problems with this at all,' Martin explains. 'You walk into somewhere like The Share Shop, and they've probably got twenty people working there, but they've got one person who probably spends a large proportion of their time fiddling with computers. Their maintenance ratio is therefore wildly different from in a school, where you've got one person who's unlucky enough to have drawn the short straw and is running on a ridiculously tight budget.'

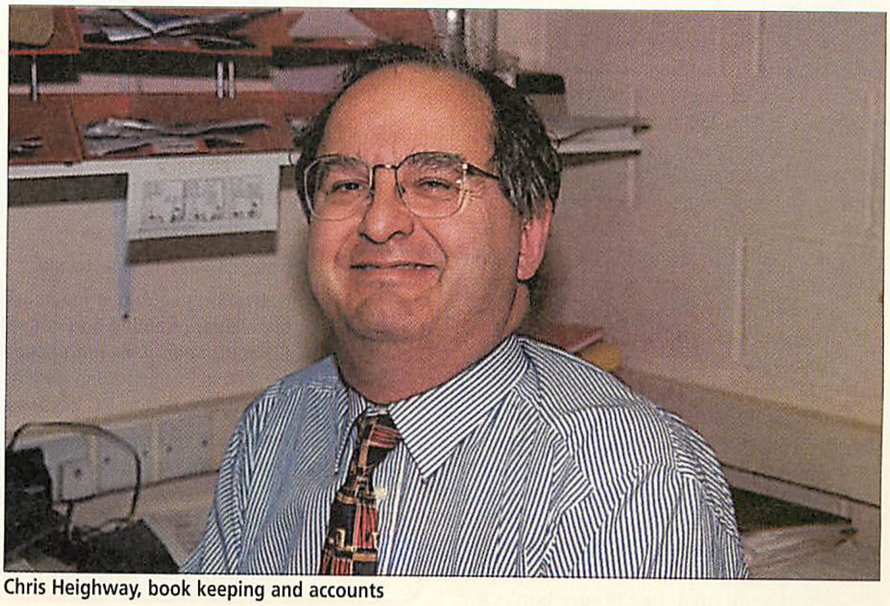
Heads and bursars watch TV, and therein lies the problem: 'When you look at the Microsoft and Intel adverts on the telly, it's presented as all being so straightforward. You just press the odd button and it all happens.' Unfortunately, that's not how it is, as anyone who's tried networking even two computers together knows. But sometimes, company directors and head teachers – presumably influenced by adverts like these – think that they can just write out a cheque for a few thousand pounds and get delivered a system that just plugs together and runs. Never happens.

Other hardware

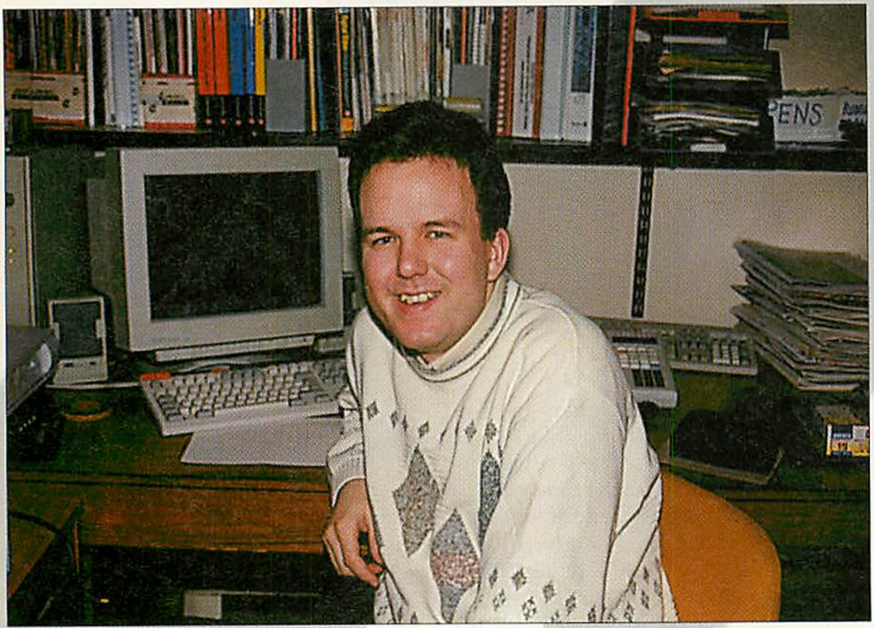
Atomwide doesn't *just* install networks, although you might be forgiven for thinking so as this area of their business is coming to dominate the others. It still also manufactures various hardware upgrades for the Acorn computers. These are mostly network-related, such as Ethernet cards and the high-speed triple serial interface card.

Demand for memory upgrades, once a mainstay of Atomwide's business, is decreasing. All modern Acorn machines, from the Risc PC onwards, take standard(ish) SIMMs. Atomwide sells these, of course, but the fluctuating cost of memory these days does mean that it's strictly Price On Asking. Atomwide's custom-built memory upgrades for older machines are much less in demand these days, and are currently being sold off cheap, so if anyone's still waiting to upgrade their A3000, now's the time to do it.

It should also not be forgotten in all the buzz about networking that



Chris Heighway, book keeping and accounts


Phil Chapman, Senior Solutions Designer

Atomwide is still an Acorn Centre of Technology, and a past winner of the *Acorn User* best dealer award. Many people are actually more familiar with Atomwide's 'local Acorn dealer' face, and may be surprised to find out about the networking aspect of the company.

On the net

It goes without saying that the past few years have totally changed what people want from networks. Previously, the main goal was connecting a set of machines on a site together. Now, by the power of the Internet, you get to connect them to the world as well; that's what the National Grid for Learning initiative's all about. Of course, with NGfL comes a large wad of money, and everybody wants a slice.

'It's easy enough to stick a modem on the back of a machine and you can go surfing the Internet. It's yet another shark marketplace, with ISPs sitting there and promising you all sorts of things and not delivering. It's all very well having a 190Mbit pipe to wherever: the pipe itself will be quick. However, if you put a proxy server on at the ISP end and then stick a content filter on it and let dozens of schools go through that proxy server, your bottleneck's not the 190Mbit pipe.'

For this reason, when Atomwide installs a router in a school to connect to an ISP's ISDN line, Atomwide itself retains control over the router and can tweak what it likes. This allows for more control over things like adding video conferencing or changing ISPs at a later date.

Martin's not sure that many schools use the Internet effectively at the moment. They tend to want all or most of their machines connected – in Martin's notional school that he's going to run the network for, he'd probably just have a few machines connected in the library, with pupils allowed to book them like library books for a specific purpose. It's partly a question of bandwidth; put every machine in the school on the net and things are going to get a bit crowded down a 128K line. Put a few dedicated machines on there, and it should at least be reasonably fast.

The Internet's also changed the way the network engineers at Atomwide work. A few years ago, they used to be very concerned about having the correct drivers when going out to install a system. Now Martin will take a portable out on site with an Ethernet card, ISDN adaptor and modem built in, and if he needs a driver he can download whatever he wants. The Internet's also a great source of news; Martin usually checks out the CNN and Beeb sites to keep up to date with developments in electronics technology.

Changing workplace

Atomwide does contact work for other companies. It understand Acorns and how to network them, while most PC-based network companies wouldn't even know where to plug in the Ethernet card. When a larger PC-oriented company gets given a contract which specifies connecting in some Acorn machines, they often sub-contract to Atomwide. In fact, Atomwide can make more money out of selling someone for four days to such a company than it would have done if it had taken the contract to install the network itself.

As Martin originally said, Atomwide started as a box-shifter with little long-term contact with the customer. Now, practically *all* its business is about long-term contact.

'It's turned full circle,' admits Martin. 'The direction of the company's changed from being a company that built hardware products. If we're building a network for someone and they want a specific bit of kit then fine: I'll buy it from a box-shifter and add a little bit on top. But what Atomwide's selling these days is not the physical hardware, it's the skills to turn that hardware into a configured, functional system.'

Atomwide has moved away from the days when customers phoned up and asked: 'how much is this?' Rather, customers now phone up and say: 'I was talking to so-and-so. You did an amazing job making their system work. I want you to make my system work for me.' It doesn't take much thought to realise which of these would give you greater job satisfaction.

Martin has made Atomwide a success by coming out with the right products at the right time, whether those products were a four-slot backplane, memory upgrades, or a full networking solution for Acorns, PCs and Apples. And when the time is right, he'll probably retire to that school with his dream network. But I don't think it'll be just yet. Atomwide's paying his mortgage, and he and his staff are doing satisfying work and having lots of fun, which is more or less the definition of a dream job these days. AU

Company profile

Name:	Atomwide
Tel:	(01689) 814500
Fax:	(01689) 814501
E-mail:	sales@atomwide.co.uk
WWW:	http://www.atomwide.co.uk/
Products:	Networking solutions for Acorn and other platforms, including hardware, installation, training and consultancy; presentation and display systems; Ethernet interfaces; high-speed serial port expansion cards; case upgrades for a Risc PC, including an eight-slot backplane; memory upgrades; parallel port SCSI adaptor; PC keyboard encoder; HiPoint trackerball for A4.

Atomwide was founded in 1987 by Martin Coulson, who is the company's Director and leads the technical team. Other staff members are: Paul McKinnon (Sales and Marketing Manager), Philip Chapman (Senior Solutions Designer), Mark Gillman (Technical Support and Product R & D), Andy Williams & Keith Vant (Network Engineers), Lynne Day (Administration Manager), Chris Heighway (Accounts) and Cleo (company cat).

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Applied survival

Brian O'Carroll takes a trip through an urban data jungle carrying the stout shield of *Impact-3*

Got a database? Got some data? What now? Users of *Impact-3* will be pleased to know that this is where the fantastic voyage begins... soon *Impact-3* will be doing its fair share of the admin and any repetitive task you can shake a stick at. At the end of this series you will better understand your data, while *Impact-3* will know your needs and carry them out with ease.

I will not be reiterating the contents of Impact's manual here, instead this series will explore how Impact's features can be beneficially exploited. I will be using Impact terminology, so that users can make reference to the manual, but in a way that will not totally exclude readers who may be using other software.

Users of earlier versions of Impact would do well to upgrade to *Impact-3*. Circle Software's upgrade rates are very reasonable and further minor upgrades and support are provided free of charge to registered users.

The modern database

In times past a RISC OS database was directly analogous to a manual card index system: predefined 'fields' on each 'record' could each contain a fixed amount of data that was either text, a number, a date or a time.

More recently the face of the database has changed as it has become more integrated with the desktop to the point where, once it has been opened, you might be forgiven for thinking that each *Impact-3* database was a different stand-alone desktop application. And yet, no knowledge of WIMP programming is required to achieve this illusion and all the functionality that goes with it.

So what lies behind the facade? The driving force of *Impact-3*'s power is its Action scripts. These typically appear as an Action button whose script is run when it's clicked. A script can be just one instruction or many lines as required and the script's language uses a syntax similar to C, but is easier to learn than BBC BASIC.

Lending further strength to *Impact-3*'s desktop integration is its ability to talk to other pieces of software: global system variables can be accessed, any star command can be given by a database and such commands may incorporate data from a record, and direct alliances have been made with both *Impression* and *OvationPro* enabling flexible and sophisticated documents to be automatically generated.

A handful of Action script commands are all that's needed to merge data into a prepared *Impression* or *OvationPro* document, and a few more lines will enable entire databases to merge into a document.

Impact-3's relational links can be made and unmade using an Action script, a method which saves oodles of time over the manual methods.

But relational links are in themselves a powerful, yet easy to misunderstand tool and the remainder of this month's instalment is devoted to them.

Relational links

The translation of a real world system into a computerised version is a task that creates consternation the world over. One only need look at air traffic controllers and British ambulances to find critical systems that have all but defied conversion. Although there may be many reasons for these problems one fact is pervasive: machines don't think like people.

For example, relational databases can be defined as *databases that each contain data that are in some way related to each other*, but this definition does not put a dent in the problem of deciding which datum in which database has what relationship to which other database The solution to this problem is obscured by terms and connotations – the English language is too hazy to be used to define a relational database directly.

Luckily, as humans, we are very good at learning by example. By seeing specific examples of relational links at work we can begin to understand how to put them to use in general.

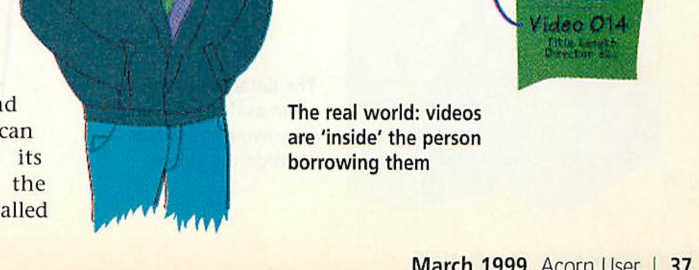
Impact-3 comes with several sample databases which are already installed with the software. If you haven't got them (*Addresses, Letters, Post Codes, Sales, Videos* and *VideoType*) *Impact-3* can be un-installed to its original disk (using the *!Installer*), then re-installed – first ensuring that the appropriate option is ticked on the installer to include installation of the sample databases.

Opening both *Addresses* and *Videos* sample databases we can see a 'foreign field' next to the label **Borrowed by** in the *Videos* window. My first video reads 'Bill Smith' and the same name is on the first *Addresses* card. If you have a different name click on that name in the *Videos* display and that person's record will now appear in the *Addresses* display.

Creating this type of relational link is explained in detail in Chapter 16 of the *Impact-3* manual, so I'm not going to repeat that here.

Looking at these two databases we can see that it makes sense: the name of the person who has borrowed a video is displayed on that video's record. Translating this situation back to real life though can conjure up some silly cartoons: Imagine 'Bill Smith' trapped inside the box with his newly hired video! Suddenly that doesn't make sense anymore.

Let's try an experiment: In the real world we would visualise the video tucked



The real world: videos are 'inside' the person borrowing them

safely away in the oversized inside pocket of 'Bill Smith's' jacket. This image, if it were used to create a relational link, would yield an *Addresses* database with a 'foreign field' containing the name of the video he has hired.

At first glance that seems a more reasonable idea because it fits nicely with our real life image. There are some immediate implications to consider though. For instance, there would need to be a fixed limit to the number of videos each person could hire since each video on hire would require a separate 'foreign field'. This is a workable constraint for a video lending library since a limit is often put on the number of videos hired to each customer, but it creates problems for managing the database which are not immediately apparent.

First of all it would be possible for the same copy of a video to be lent to two different people! Not in real life, obviously, but the nature of *Impact-3*'s relational links would allow that situation to be represented in our imaginary new set up.

Secondly, each of our (let's say eight) 'foreign fields' in the *Addresses* database would have a distinct name (**video1, video2 ... video8**) and any operation that needs to be done on one (find out date hired, for example) would need to be repeated explicitly for the other seven. In some cases this can be a good method, but in this case we would be wasting a useful resource of *Impact-3* – it loves scanning through other databases and has a good selection of Action script commands for doing just that.

Also, if a ninth video needed to be hired to a customer at some point, a not inconceivable possibility, it would involve a lot of re-programming to allow the database to do it.

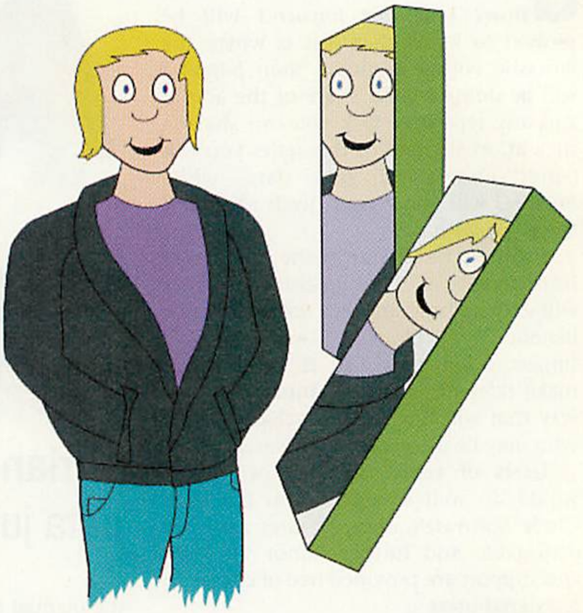
So the way the relational link has been implemented in *Videos* is our method of choice in this example. The point we have taken on board here is that there are two possible directions for a relational link between databases in *Impact-3*, and one may have important advantages over the other, depending on the databases's intended use.

As these sample databases stand they are by no means a foolproof video lending set-up, but they demonstrate the often counter-intuitive nature of creating a relational link.

One last trick before we close these databases: Click on the button marked **On loan** and you should see a list of all the videos that are on loan – some of them read 'Bill Smith' (or another name if your version is different). Try to imagine the same 'Bill Smith' trapped inside the boxes of all the videos he has on hire.

However, like the best stage magic this effect is done with mirrors. If Bill decides his parents were right and starts to go by the name of William we will need to change his name in the *Addresses* database. Do that now, save the newly altered record, then click **On loan** again. All the entries that previously read 'Bill Smith' now read 'William Smith'.

We can amend our mental cartoon image: Each video has a mirror stuck to it and they are arranged so that the ones hired to 'Bill'/'William' show his reflection. If original 'Bill' changes, naturally, so do all his reflections on the videos. The *Videos* database, then, only mirrors the data of the record to which it is related or linked and will reflect changes made to that data at the source.



Just a pale image of his real self: it is only a reflection of the borrower that is inside the videos, the real Bill stays where he is but can be seen through the relational link

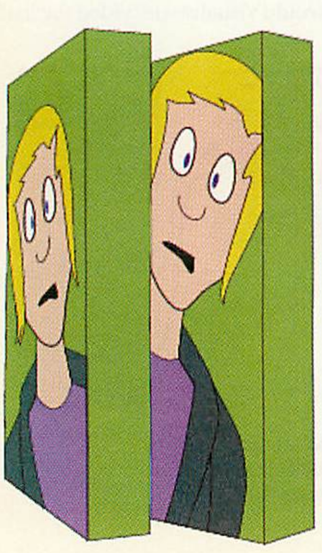
This contrived piece of cartoon imagery is not the first one that springs to mind when originally designing this relational database, in fact, it was a tortuously hard image to arrive at. Such is the art of organising and designing databases – first analysis of real systems can lead you up the garden path. If you instinctively went for the sample database method with the foreign field in the *Videos* database, don't worry – that's just your own instinctive genius showing.

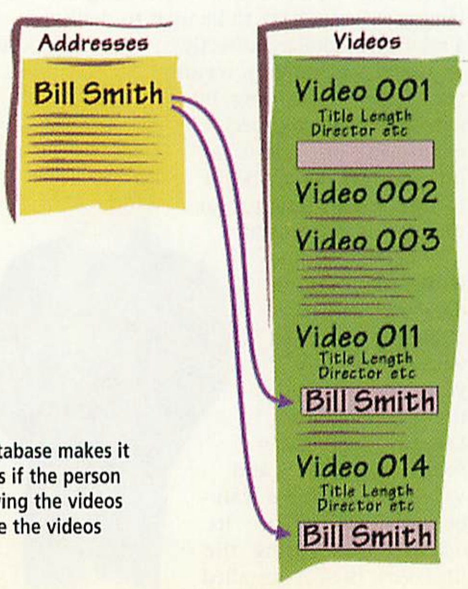
Workflow

Workflow is something that is not mentioned in the *Impact-3* manual but is a term used (I have heard) in other platforms's applications, like Lotus *Notes*. I'm not using a strict definition of workflow here I just want to use the word as an anchor to what I'm talking about.

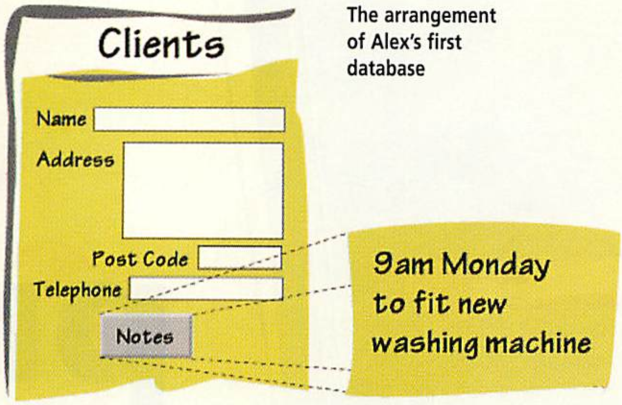
The *Videos* and *Addresses* example above demonstrates workflow in that it keeps track of stages of a transaction in progress: the hiring and return of a video. One of the ways that databases like *Impact-3* have developed on the RISC OS platform is that they are no longer merely repositories of static data, records can now have states that change to keep track of situations and record events as they take place. The very word record tends to obscure what that entity can really do.

For this series we shall follow the development of a suite of databases by a member of that most noble of





The database makes it seem as if the person borrowing the videos is inside the videos



The arrangement of Alex's first database

professions: The Household Plumber. He (meaning: he or she) has a Peanut in his briefcase (meaning: a portable RISC OS computer in his or her briefcase), a portable printer and a mobile phone/modem. Our plumber also wears yellow dungarees and a red baseball cap to make the computer game rights more marketable.

The first step is to create a core set of databases that will enable our plumber, "Alex" (his or her name), to go about his job. The idea of workflow is central to this development and will be built upon as the suite comes together, using relational links and Action scripts to gradually take the burden off of Alex's shoulders by harnessing the power of *Impact-3*.

Enabled plumber's diary

Saturday: Alex sits in his office (spare bedroom with an old kitchen table in it) hemmed in by a low lying mist of bubble wrap and anti-static plastic. In front of the new, gently humming hardware is a scrap of paper with the quickly, but legibly, written scrawl: "Mr G Kenyon, 133 Vinyard Parade, Pealing. Tel 555 0486 – 9am Mon, fit and test new washing machine".

Alex's first job and his first bit of data: A name, an address, a time and a description of the work to be done. Already Alex has created a database called *Clients* and entered Mr Kenyon's details as record 1. There is a field dedicated to the telephone number and Alex has made use of a **Notes** text field to store the other details about the job that will be permanently kept as part of that record.

But now Alex realises that the appointment information is hard to get at – being tucked away inside a **Notes** field and considers how he can make better use of the database software. He decides that a database called **Jobs** is the way forward – each record in **Jobs** will be an appointment with a client and will record the date, time and work to be done and where the job is.

So how should Alex implement this? Obviously there is a link between the job and the client and Alex has to decide in which database to put the foreign field. We have two choices:

- A foreign field in *Clients* which links a job
- A foreign field in *Jobs* which links a client

After considering both, Alex decides that the second is the best method. With the first the number of jobs for each client is limited to the number of foreign fields we implement in *Clients*. The second allows each client to have many jobs associated with them, but each job has only one foreign link and only one client, as we'd expect – even Alex can't do one job for two clients.

In general database terminology the type of relational link that *Impact-3* makes might be called a one-to-many link. Records in the database with the foreign field in it, *Jobs*, can each only be linked to one client, but a single *Client* record can be linked to by many individual *Jobs* records. Since Alex is a good plumber Mr Kenyon will be calling on him to do much work in the future (Mr Kenyon doesn't know it yet but his central heating is only hanging on by a toenail).

Alex uses the client's name as the relational link and drags it across from *Clients* into *Jobs* while editing the *Jobs* card – he then names the new foreign field **who**. He also drags across the address and makes it a dependent field by un-ticking the **key field** box in its edit window and selecting **who** from the adjacent menu. This is then named **where**. With **starttime**, **ondate** and **worktodo** fields set up this becomes a functional *Jobs* database.

Alex sets up his first job by creating a new record in *Jobs*, dragging Mr Kenyon's name from *Clients* into the blank **who** field, and enters the date, time and a description of the work in **worktodo**.

In workflow terms, Alex is using the *Jobs* database like an appointments diary: it's a plan of action.

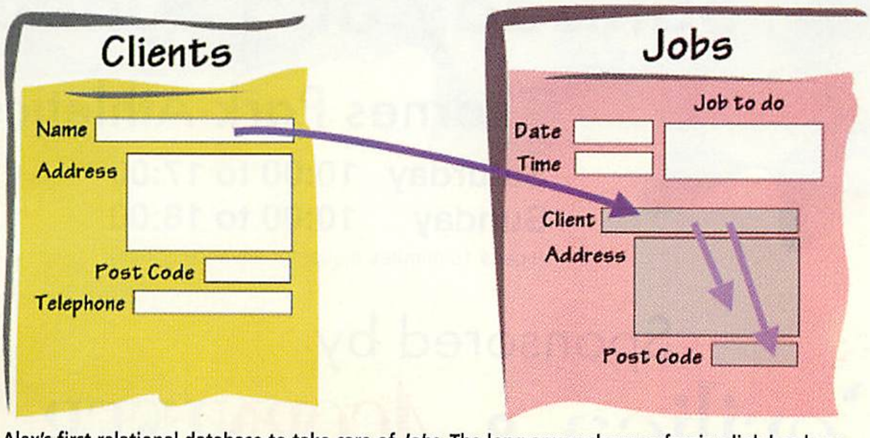
Sunday: Day of rest (As we all know, plumbers have families too and don't work on Sundays)

Monday, 9.23am: While in the queue at the Pealing DIY store (Mr Kenyon needed a hose to connect up the washing machine) Alex thinks about his databases so far. "What I need now", he thinks, "is a place to store the billing information".

What is really on Alex's mind at this point is invoicing Mr Kenyon for the fitting (plus parts). He already has his DTP document ready with it's *Invoice* heading and his business details on it and he would normally have to stand in the kitchen and type out the rest of the invoice with two fingers and a thumb while Mr Kenyon (who's a nice man really) scrutinises Alex's every keystroke. The cost (ex parts) has already been agreed – shouldn't it be in the system already?

Indeed it should. And next month we'll get stuck straight in with Action scripts and start to tackle the financial aspects of this database suite. For now you should have enough of an idea of how to adapt real-world need to multi-database environments to have a good old experiment

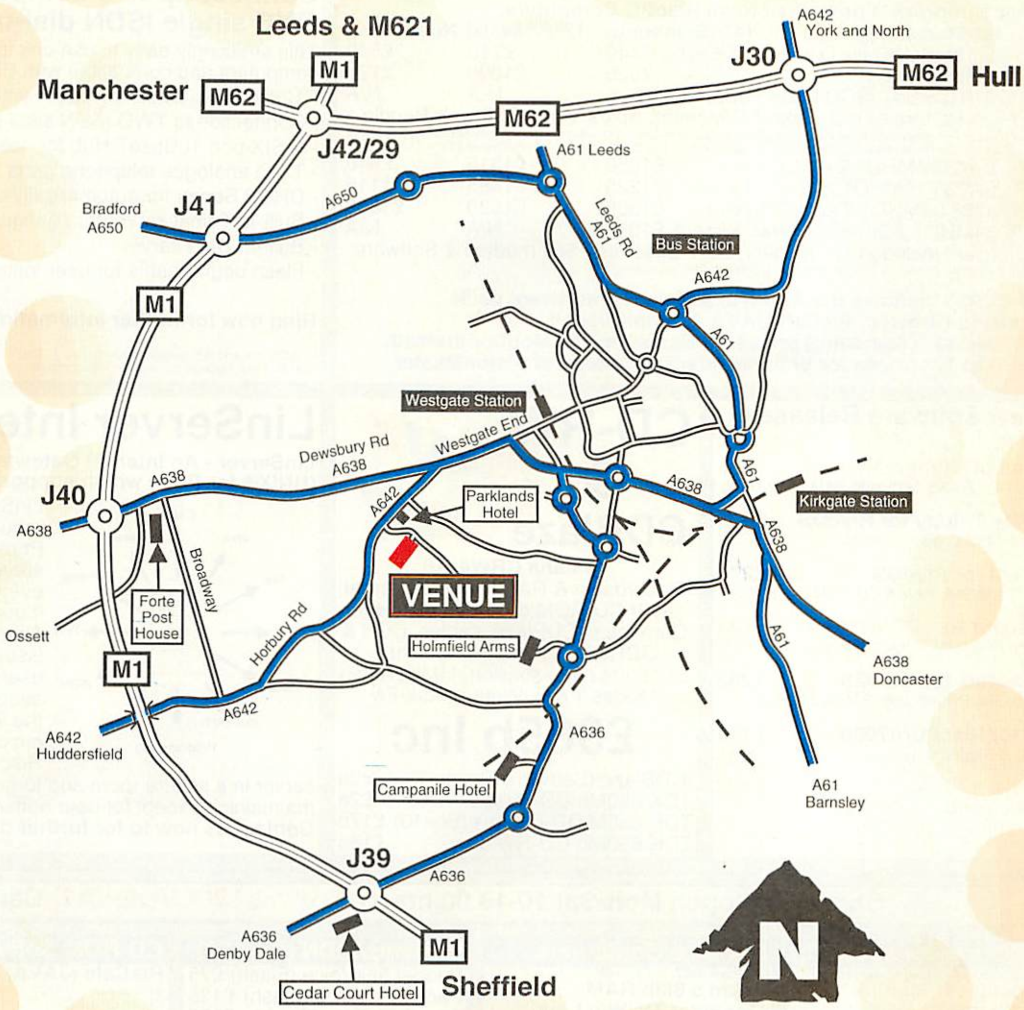
If you've already read *Impact-3*'s manual and some of it didn't make sense ("Now why on Earth would anyone want to do that?") perhaps it will make more sense now. Before the next instalment you might want to create Alex's database suite, but don't stop where this article ends, keep going, see if you can make a mess, or make sense, of the rest of the suite before Alex presents more of his own solutions next month. AU



Alex's first relational database to take care of *Jobs*. The long arrow shows a foreign link has been created; the two shorter arrows represent fields which are dependent on the *key* field: their data will be filled in according to the link made in the *name* field



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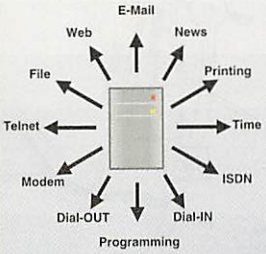
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Mark Moxon continues his series on RISC OS Java programming with a look at windows and dialogue boxes

Life, the universe and Java

PART 4

Welcome back! Today we're going to continue the thrills and spills of applet creation in Java with a look at making your HTML pages come alive with layouts and windows.

We've already covered a number of Java components that we can use to display in our browser, but so far we haven't had any control over where on the page they are placed. All we have been able to do is specify the size of the applet's display area in the browser, and hope that the JVM puts things in the right place.



The way to take control of the layout of your applet's display is to use a different layout manager. The default layout manager is **FlowLayout**, which does just what it says: it works from left to right and up to down, simply flowing components onto the display area as they arrive. This is fine for simple layouts, but for anything containing more than a few components we need something more powerful, such as the grid layout.

The **GridLayout** layout also does just what it says: it provides a grid on which we can place our components. A grid layout is an object of the class **GridLayout**, so we declare and create a grid layout in the usual way, by using a declaration and a constructor: see *Ex12/java* for an example. The **GridLayout()** constructor takes two arguments, namely the number of rows and the number of columns in our grid.

Once we've defined the grid layout object, we set the current display to use that layout using the **setLayout()** method, which takes a layout object as its argument. That's all there is to it: the display is now set up as a grid layout.

To actually put components into the grid layout we still use the standard **add()** method. The difference is that each component is put into the grid in turn, starting in the top-left-hand corner and working from left to right, and then up to down. In our example we create a calculator keyboard, and we add our



buttons to the grid in the order blank, calculator display, blank, 7, 8, 9, 4, 5, 6, 1, 2, 3, blank, 0, C. To add blank cells we simply define an empty label and add that to the grid, but do note that we need to define a new empty label for each of the three empty cells: an object can only be added to a display once, so if we didn't create new empty labels and instead used only one, each new addition would remove the previous one.

The rest of the program just detects button clicks and amends the calculator's display label accordingly. The **action()** method uses the **instanceof** tester (**obj instanceof class** is true if **obj** is of the class **class**) and the casting operator (putting a class in brackets before an expression forces the expression to that class, enabling the compiler to know what class the expression will have: in this case we have to tell it that **e.target** will be a **Button**, so it can make sure it knows to use the **getLabel()** method from the **Button** class and not give a compile-time error.

The grid bag layout

Our calculator looks much better than it would have done with a **FlowLayout** layout, but there are two things that are impossible with the **GridLayout** layout: we can't make the label that displays the calculation stretch across the whole calculator width, and we can't make the 0 button twice as wide as the other keys, as it is on a keyboard's numeric keypad. This is where the grid bag layout comes in.

We initialise a grid bag layout in a similar way to a grid layout: we define an object of the class **GridBagLayout** and construct it with **new GridBagLayout()**, as you can see in *Ex13/java*. We also need to define another object before we can set the layout to our new grid bag with **setLayout()**: we need an object of the class **GridBagConstraints**, which we construct in the usual way with **new GridBagConstraints()**. This latter object contains all the data needed to fit our components into the grid bag grid in the way we want.

We still add components to the grid bag using the left-to-right, up-to-down method as used in grid bag layouts (though it is possible to insert components anywhere in the grid, if necessary). However, before we use the **add()** method, we have to set up certain fields in our **GridBag Constraints** object, which will then be used to determine how our object looks. The following fields should be set in each addition to the grid bag layout (if, for example, our **GridBagConstraints** object is called **constraints**):

- **constraints.gridwidth**: the width of the component in columns; if set to GridBagConstraints.REMAINDER the component is the last entry in that row and will fill up all remaining space;
- **constraints.gridheight**: the height of the component in rows; if set to GridBagConstraints.REMAINDER the component is the last entry in that column and will fill up all remaining space;
- **constraints.fill**: determines in which directions the component should be stretched to fill its cell; should be set to one of **GridBagConstraints.BOTH**, **GridBagConstraints.HORIZONTAL**, **GridBagConstraints.VERTICAL** or **GridBagConstraints.NONE**;
- **constraints.anchor**: sets the relative position of an object within its cell; can be set to **GridBagConstraints. CENTER** or any of the compass points, such as **GridBagConstraints.NORTH** for the central top of the cell, or **GridBag Constraints.SOUTHWEST** for the bottom-right-hand corner of the cell;
- **constraints.weightx** and **constraints. weighty**: sets the relative widths of cells to be taken into account when the area is resized; not to be confused with the grid widths, which determine how components stretch over cells.

Once we have set up the relevant constraint fields we have to call the **setConstraints()** method from the **GridBag** class, giving the component and our **GridBagConstraints** object as arguments; then we can finally add the component to the display with **add()**.

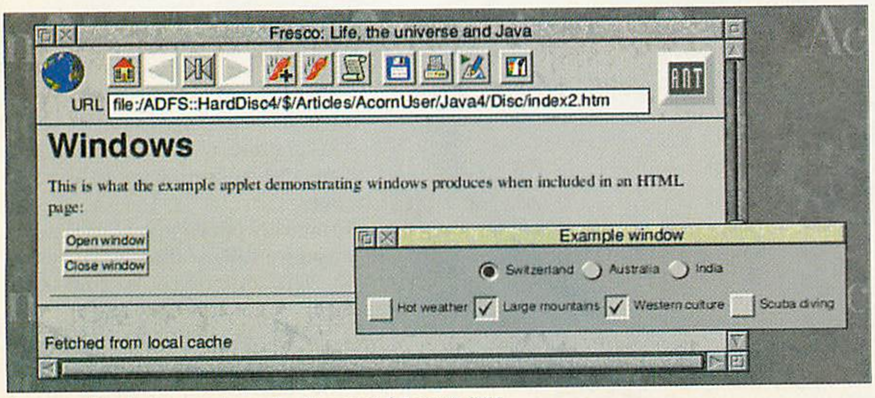
We perform this action for each component in the grid bag in turn. However, values set in our **GridBagConstraints** object are retained through calls to **setConstraints()**, so if everything we want to put into the grid bag needs the same values for a particular constraining field, we need only define that field once and it will apply to all the cells (such as **weightx**, **weighty** and **fill** in *Ex13/java*). This is also useful when defining the **gridwidth** field, as we can set it to 1 and leave it alone until we come to, say, a cell which is at the end of a row (in which case we change it to **GridBagConstraints.REMAINDER**) or is a different width (as for the 0 button, where **gridwidth** is set to 2).

In this way we can set up our calculator as desired. In our example all the cells have **weightx** and **weighty** set to 1 and **fill** set to **GridBagConstraints.BOTH**. All cells have **gridwidth** set to 1 except the result label, 9, 6, 3 and C which have **gridwidth** set to **GridBagConstraints.REMAINDER**, and 0 which has a **gridwidth** of 2. It might seem like a lot of work to set up a grid bag layout, but it does give us the flexibility we need.

Windows, super-classes

At last, we've come to the part where we can define our own windows in Java: up until now we've had to rely on our browser to display our applet's output. Defining our own windows is essential if we want to use features like menus and dialogue boxes, all of which will make the user interface of our applets that much more sophisticated.

Windows are objects of the class **Frame**, but to create a window we must define our own class which is an extension of the **Frame** class rather than just using **new Frame()**. I mentioned class creation briefly last month, but essentially we can create our own classes using exactly the same syntax as we have for the classes **Ex01**,

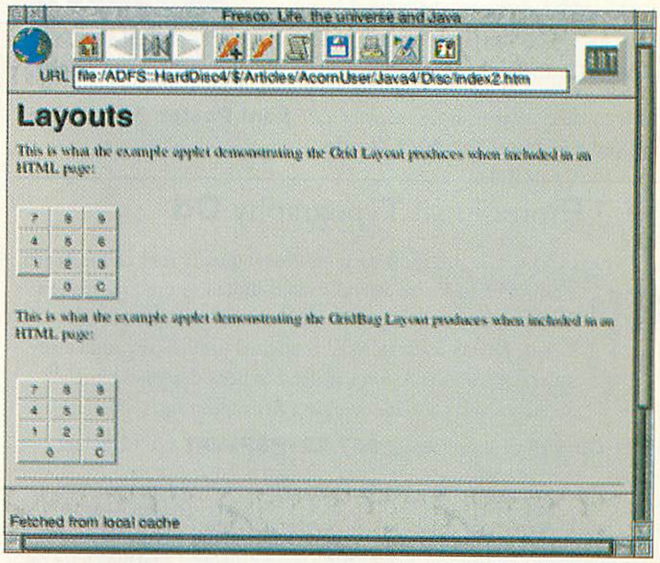


An example window as shown by Fresco and Acorn's JVM

Ex02 and so on. Take a look at the code for *Ex14/java* and scroll down until you see the line beginning class **Window**: this line defines a new class, called **Window**, which is based on the **Frame** class (we say it extends it and use an **extends** statement) and as such inherits all the **Frame** methods and fields.

Seeing as we are creating a class which will be used to define objects, we need to implement a constructor for our **Window** class: remember that a constructor should have the same name as the class itself, so our first method definition is the constructor **Window()** which takes one argument, the title string of the window. Now, one of the important points about Java's classes is that if one class is an extension of another (as **Window** is of **Frame**) if an object of the sub-class is constructed, Java will automatically call the super-class's constructor first.

So in our case Java would call the **Frame** constructor before launching into the code we might put into the **Window** constructor method. This is all well and good – after all, if we are deriving an object from a class, we obviously need to create an object of that class before we can extend it – but what Java does is call the super-class's constructor with no arguments at all. If we want to pass arguments to the super-class's constructor, we have to do it ourselves.



Grid and grid bag layouts as shown by Fresco and Acorn's JVM

We can call the super-class's constructor using the **super()** method in which we can include arguments. This method must be the *very* first line in the constructor, otherwise Java will ignore it and will call the super-class's constructor with no arguments: in *Ex14/java* we want to pass the window title to the **Frame** class's constructor, so we use **super(title)**, which over-rides the argument-free call Java would normally make.

```
public class Ex13 extends Applet {

  Label label1;

  public void init() {
    GridBagLayout gridbag = new GridBagLayout();
    GridBagConstraints constraints = new GridBagConstraints();
    this.setLayout(gridbag);
    constraints.weighty = 1;
    constraints.weightx = 1;
    constraints.fill = GridBagConstraints.BOTH;

    label1 = new Label("", Label.RIGHT);
    constraints.gridwidth = GridBagConstraints.REMAINDER;
    gridbag.setConstraints(label1, constraints);
    this.add(label1);

    constraints.gridwidth = 1;
    this.makeButton("7", gridbag, constraints);

    this.makeButton("8", gridbag, constraints);

    constraints.gridwidth = GridBagConstraints.REMAINDER;
    this.makeButton("9", gridbag, constraints);

    constraints.gridwidth = 1;
    this.makeButton("4", gridbag, constraints);

    this.makeButton("5", gridbag, constraints);

    constraints.gridwidth = GridBagConstraints.REMAINDER;
    this.makeButton("6", gridbag, constraints);

    constraints.gridwidth = 1;
    this.makeButton("1", gridbag, constraints);

    this.makeButton("2", gridbag, constraints);

    constraints.gridwidth = GridBagConstraints.REMAINDER;
    this.makeButton("3", gridbag, constraints);

    constraints.gridwidth = 2;
    this.makeButton("8", gridbag, constraints);

    constraints.gridwidth = 1;
    constraints.gridwidth = GridBagConstraints.REMAINDER;
    this.makeButton("C", gridbag, constraints);

  }
```

Defining a completely new class for the calculator applet

One final point about creating our own classes. When we create a new class, for example **Window**, our Java compiler saves out a separate class file for that class: you might have noticed that last month we had two class files *Countries/class* and *Features/class* on the disc; these were produced by compiling *Ex08/java*, which defined these classes. In *Ex14/java* we define the **Window** class, and therefore create the *Window/class* file on compilation; class files can also be imported, and *Ex14/java* does just that with the **Countries** and **Features** classes.

Opening and closing windows

Before we can actually go about constructing objects of our new class Window we have to do a few more things than just call the super-class's constructor. Windows are created without layouts attached, so we must set a layout using the **setLayout()** method (in our example we've chosen a grid layout). Next it's a good idea to set whether the window is resizable, before using the standard **add()** method to add components to the window: in this case we add two panels, one above the other in the grid, the first one containing check boxes from the **Countries** class, and the second one radio buttons from the **Features** class.

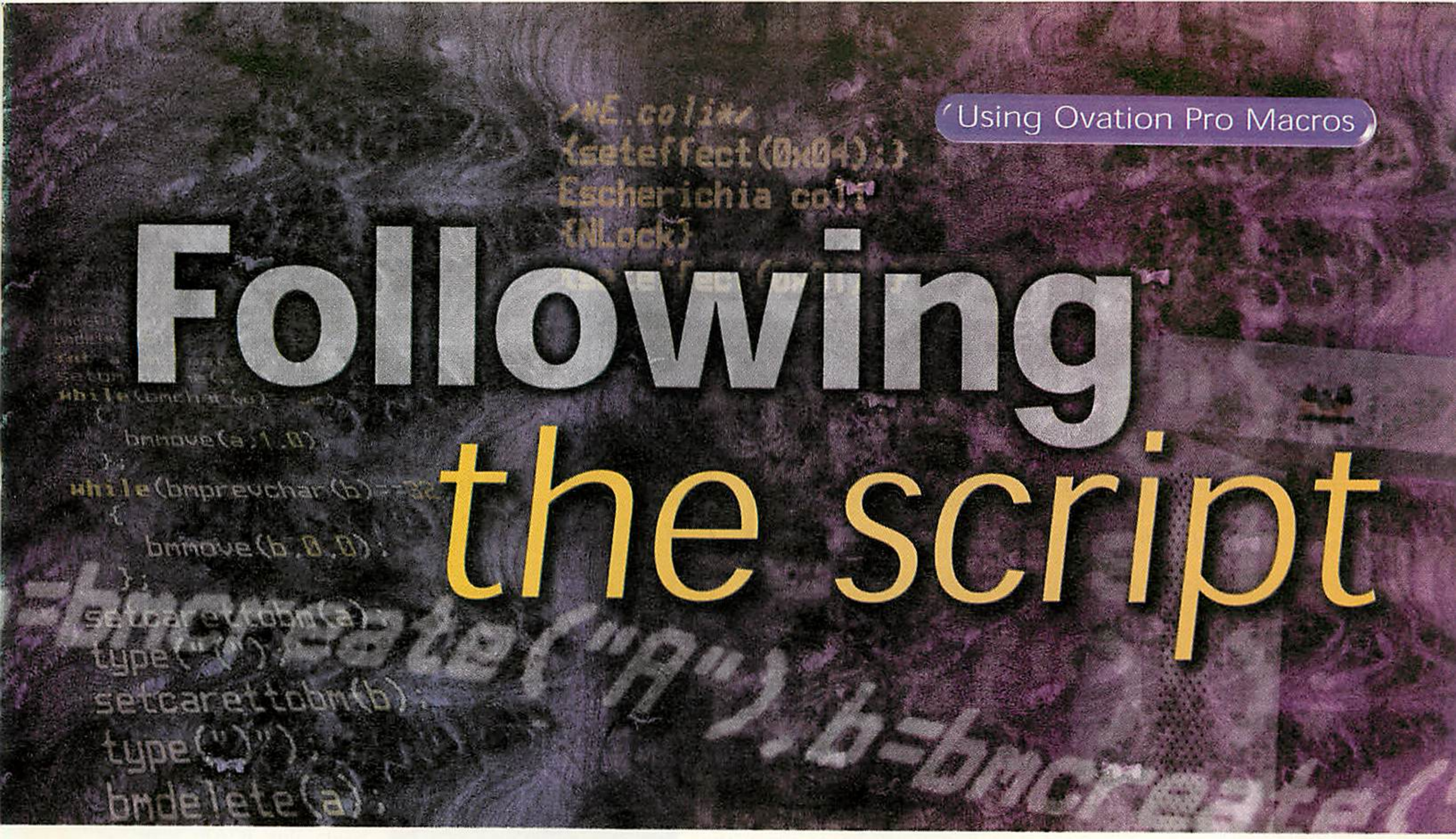
The window now contains its objects and is almost ready to be displayed, but if we tried to display it straight away, we would end up with a window of zero size. The **pack()** method sorts this out by resizing the window so that the window's components fit exactly in the window. Finally our constructor is complete.

To display the window from our main class **Ex14** we create a new object of the class **Window** using **new Window()**. This object can be displayed on screen using the **show()** method from the **Frame** class (which is inherited by the **Window** class), and can be removed from screen using **hide()**. If we want to remove the window from the memory – if we know we will never use it again, for example – we can use the **dispose()** method.

There is one final area of our program which needs explaining. If we simply define our **Window** class to construct a window with a bunch of buttons, it will pop up and down when requested by the main class, but that's all: we need to make it reactive. This is done in the usual way using **action()** and **handleEvent()** methods, with one difference. The **handleEvent()** method must trap the event **Event.WINDOW_DESTROY** which is returned when the user clicks on the window's close icon; all it needs to do is hide the window. Any other events can be handled by the **action()** method as per usual.

Next month

We're progressing quickly, and next month we'll have a look at passing parameters to applets from HTML, and adding menu systems to our windows. AU

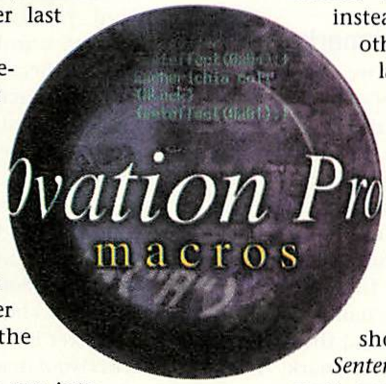


Following the script

John Pettigrew concludes his look at *Ovation Pro's* scripting language

Last month, I gave a brief introduction to some of the simpler things that are possible with scripts in *Ovation Pro*. However, as with most such overviews, this doesn't give much of an idea of the extent of the possibilities. To rectify this, I'm now going to show how to add two new commands, both of which are actually useful; in doing this, some of the features I didn't cover last month will also crop up.

OvPro has built-in case-changing abilities, but these are limited to all capitals and title case, the first letter of each word in the selection is changed to upper case. However, it is possible to have other variants, such as sentence case, in which the first letter of the first word in the selection is capitalised.



In order to do this, we run into one of the limitations of macros – the 256-character limit of the icon used to enter the text. This macro will need more than this, meaning that we must break it up into smaller steps. Of course, it is also possible to get past this limit by using a different form of script, such as a separate file (run by double-clicking) or an applet, but this is not necessary here.

Although splitting the macro is a necessity, it is also a useful thing to do, for two important reasons: first, it makes it easier to follow the macro, because it is essentially broken up into functions; second, it means that we can reuse these component functions in other macros without having to rewrite them every time.

User macros

In order to break up the large macro, we make use of user macros. These are basically the same as button and key macros except that they have no associated button or keypress. This means that they cannot be run directly but instead are called from other macros. Just as, last month, we had to call {NLock} to flush the effect buffer so we could reset the normal text, we can call our own user macros by name from within other macros.

To decide how we should break up the *SentenceCase* macro, we must analyse it to see what tasks are needed. First, we need to mark the beginning and end of our selected zone. Second, we must select (highlight) the word at the beginning of the selected zone. Third, we should select the first letter of this word and then capitalise it. Last, we must delete all the bookmarks we have used.

Marking the selection

Although we only need to know the beginning of the selected zone in this case, the SelectZone user macro will be available to use in other macros, too. This means that it will pay to write it with possible future uses in mind. Thus, Figure I shows a macro that will set bookmarks (**ZoneStart** and **ZoneEnd**) to the start and end of the selection, respectively.

First, the macro creates the bookmarks. Then, the position of each is set to the beginning or end of the selected zone. Finally, the caret is set to the position of the bookmark **ZoneStart**, which is at the start of the selected zone, so that we can be sure of where it is.

Selecting the word

This involves two more user macros, purely because of the length restriction on macros. Figure 2 shows these two macros, and also shows how one is called from the other. It is important to remember that we can't be sure whether or not the selected zone contained the whole of the first word, so we need to check this.

MakeWdBM is a separate function that makes the bookmarks for the word selection. These are first defined, with names **WordStart** and **WordEnd**, and then each is set to the position of the caret. This macro is called from the *SelectWord* macro simply by using its name in curly brackets. Once this is done, we can start using these

Figure I: A macro to set bookmarks to the start and end of the currently selected zone of text

```
/*SelectZone*/
{
 int a=bmcreate("ZoneStart"),b=bmcreate("ZoneEnd");
 setbmtozone(a,b);
 setcarettobm(a);
}
```

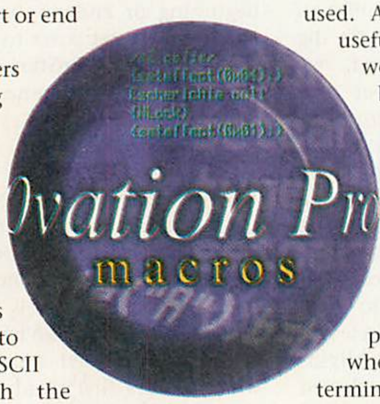
```
/*MakeWdBM*/
{
  int a=bmcreate("WordStart"),b=bmcreate("WordEnd");
  setbmtocaret(a);
  setbmtocaret(b);
}

/*SelectWord*/
{MakeWdBM}
{
  int a=bmfind("WordStart"),b=bmfind("WordEnd");
  while(!((bmprevchar(a)==-1)||(bmprevchar(a)==10)||(bmprevchar(a)==32)))
    {
      bmmove(a,0,0);
    };
  while(!((bmchar(b)==0)||(bmchar(b)==10)||(bmchar(b)==32)))
    {
      bmmove(b,1,0);
    };
  setcarettobm(a);
  setzonetobm(b);
}
```

Figure II: The two macros that together select the word around the caret

bookmarks. However, we must create new variables to handle them with, because variables in *OvPro* scripts are local to the macro in which they are defined.

Having created handles for the bookmarks, we can then move them until they are at the beginning and end of the word. Thus, the first bookmark is moved backwards and the second is moved forwards. The movement is controlled by a *while* statement, because we want the bookmarks to move only until they run into one of the characters that indicate the start or end of a word.



The characters we are looking for are, in the order they appear in Figure II, the start of the story, a new line or a space. The characters are referred to by their ASCII numbers, with the start of the story being indicated by -1 (not 0 as stated in the documentation). The *!* in the while statement indicates a logical Not, and the || characters indicate a logical Or. Thus, the first *while* statement can be read as: while the character before the bookmark does not have the value -1 or 10 or 32, move the bookmark back one character.

The second *while* statement does the same for the *WordEnd* bookmark, although here, it is looking for whether the next character is the end of the story (confusingly indicated by a 0 from **bmchar** – the documentation is correct here) in addition to a new line or a space. While the next character is not one of these, the bookmark is moved forward one character.

Finally, the caret is set to the beginning of the word (via the bookmark positioned there) and the selected zone set to extend from there to the second bookmark, at the end of the word.

Deleting the bookmarks

The final user macro we need for this is one to delete the bookmarks we have used. Again, to make it as generally useful as possible, it would be good if we didn't just delete the named bookmarks but all of them. Figure III shows the *DelBM* macro, which uses the *bmname* function to scan all the bookmark handles that have been used and then delete the relevant bookmark; *bmname* returns in s the name of the bookmark whose handle was passed in **a**. The function returns 0 when there are no more bookmarks, terminating the while loop.

The important point to notice in Figure III is the use of the ++ operator. As described last month, this adds one to the value of the variable each time the statement is executed. When placed after the variable, as here, the incrementing is done after the variable is used in the statement. Thus, we must subtract 1 from a before deleting the bookmark, to return it to the value it had when the while statement was executed.

This macro deletes all the bookmarks in the current document, which may not be what is wanted – there may be bookmarks left from other macros that need to be kept. If this is the case, you can easily add a check for these with an *If* statement, along the lines:

```
"If(!((s=="mark1")||(s=="mark2")))
{bmdelete(a-1) ;};"
```

```
/*DelBM*/
{
  int a=0;
  string s;
  while(bmname(a++,s))
    {
      bmdelete(a-1);
    };
}
```

Figure III: A short macro to delete all bookmarks from the document

The final macro

Figure IV shows the macro that we end up with in order to achieve our sentence-case macro. Once all these tasks have been removed to user macros, it actually looks fairly simple. First, we call the *SelectZone* macro, which sets a bookmark to the beginning of the selected region. Then the *SelectWord* macro scans the text around that bookmark and sets further bookmarks to surround the word containing it (the start and end of a word being defined as the start or end of the story, a new line, or a space).

Once the word is selected, the *SentenceCase* macro creates a new bookmark and defines another variable to point to the bookmark that indicates the start of the word. This is because it needs to use that bookmark and it cannot use the previous variable because that was assigned in a different macro. The new bookmark is set to the beginning of the word by putting it in the same place as the *WordStart* bookmark.

This new bookmark is then moved one character to the right so that the two bookmarks surround the first character of the word. Setting the zone to extend to the new bookmark means that this character is now highlighted, because the *SelectWord* macro sets the caret to the start of the word. Setting the case to 2 means "all capitals", giving us our initial capital letter. Finally, the bookmarks are deleted from the document by calling *DelBM*.

It would be possible to extend this macro to true sentence case by, for example, checking that there was a full stop before the first word or by setting all

```
/*SentenceCase*/
{SelectZone}
{SelectWord}
{
  int a=bmcreate("A"),b=bmfind("WordStart");
  setbmtobm(a,b);
  bmmove(a,1,0);
  setzonetobm(a);
  setcase(2);
}
{DelBM}
```

Figure IV: The finished *SentenceCase* macro

the letters except the first to lower case. The first of these is fairly easy, but unnecessary (I usually assume that people want macros to do what they demand, rather than second-guessing them). The second is rather harder, because there is no 'lower case' command available by default, so we would have to add it by hand by manipulating the ASCII codes.

Switching words

OvPro has a very useful facility built in – if two letters are the wrong way round (for example, I might type this worngly), Ctrl-Shift-Q will swap them around ("worngly" becomes "wrongly"). However, it is also possible to write a macro that will do the same thing for whole words. This will reuse two of the user macros we used above and implement one more.

In order to do this, we must select the word containing the caret, setting bookmarks to its beginning and end (using *SelectWord*). Then, we need to move to select the next word and set bookmarks to its beginning and end. After this, we must cut the first word out and paste it in on the other side of the second word, preferably taking the spaces with us so that the words remain separate. Finally, we must delete all these bookmarks.

Selecting the next word is similar to the *SelectWord* macro but with a few additions, and is shown in Figure V. First, we create two bookmarks to be set to the two ends of the new word. One of these is set to the end of the first word by using *bmfind* within the *setbmtobm* function, to avoid defining a variable to handle a bookmark we only need once in this macro.

The new bookmark is then moved to the start of the next word using a *do...while* loop, which is exactly the same as a normal *while* loop except that the condition comes at the end of the loop. This means that the statement in the

```
/*SwitchWords*/
{SelectWord}
{NextWord}
{
  int a=bmfind("WordEnd"),b=bmfind("New2");
  if(bmchar(a)==32)
    {
      bmmove(a,1,0);
    };
  if(bmchar(b)==32)
    {
      bmmove(b,1,0);
    };
  setcarettobm(bmfind("WordStart"));
  setzonetobm(a);
  cutselection();
  setcarettobm(b);
  pasteselection();
}
{DelBM}
```

Figure VI: Moving the word containing the caret one word to the right

```
/*NextWord*/
{
  int a=bmcreate("New1"),b=bmcreate("New2");
  setbmtobm(b,bmfind("WordEnd"));
  do
    {
      bmmove(b,1,0);
    }
  while((bmchar(b)==10)||(bmchar(b)==32));
  setbmtobm(a,b);
  while(!((bmchar(b)==0)||(bmchar(b)==10)||(bmchar(b)==32)))
    {
      bmmove(b,1,0);
    };
  setcarettobm(a);
  setzonetobm(b);
}
```

Figure V: Selecting the word following the one last selected with *SelectWord*

middle will always be executed at least once, whereas the statement in the normal *while* loop may never get executed. In this instance, we are definitely going to want the bookmark to move at least one character (so that it is past the space between the words).

The bookmark is moved until the character after it is not a new line or a space. Once the start of the new word has been located, the second new bookmarks is also set to that position. Now, one bookmark is moved through the word until the end is reached, using the same conditions as before (the character following the end of the word must be the end of the story, a new line or a space).

Finally, the caret is set to the beginning of the word and the selected zone set to extend from there to the end of the word, as we did in the *SelectWord* macro (it is useful to have the two macros behaving in the same way!).

Switching the two words

Figure VI shows the *SwitchWords* macro. As before the 'unique' body of the macro is relatively simple once the separate user macros have removed much of the complication.

First, bookmarks are set to the beginning and end of the word containing the caret using *SelectWord* – this is why we made that macro more general than we needed at the time – user macros may be used by several master macros, so it pays to make them general, to save writing two or three that are very similar. Next, bookmarks are also set around the following word.

The two macros *SelectWord* and *NextWord* select only the text of the word itself, not the trailing spaces, largely because there is no space left to add this code. For the *SentenceCase* macro, this was irrelevant, but here, we need them to avoid having the words running into one another. Thus, we need to add two *If* statements – if there is a space after either of the bookmarks that denote the end of a word, move that bookmark one character forwards.

Having done this, all that remains is to cut and paste the first word. Thus, we need to select that word (set the caret to the start and then set the zone to extend to its end) and cut it, then move the caret to the end of the second word and paste the first word in there. Finally, we again need to delete all the bookmarks that we have used, using the *DelBM* macro. AU

Do it yourself...

I hope that this pair of articles has given you a flavour of the sort of thing that can be achieved using macros in *Ovation Pro*. They can extend from saving a little bit of typing to adding whole new functions and options. The macros I've described in this article and the last one are on the cover disc; if you don't want to type them in from the magazine, you can have a look at this file for some tips. Drag it onto the *OvPro* iconbar icon and the buttons will appear on the toolbar.

There some extremely useful third-party macros and applets around on the Net and in other places. For example, one of my personal favourites is SRWE by Stephen Brown, which extends the normal find and replace option to allow you to specify the effect or style of the text you wish to find, or to use macros in your replace text – so that you can insert text in superscript, for example.

However, even fairly simple macros can produce useful functions and I hope I've encouraged some of you out there to have a go. It's easy, fun and even saves effort in the long run.

Scene setting

Alasdair Bailey presents more new games

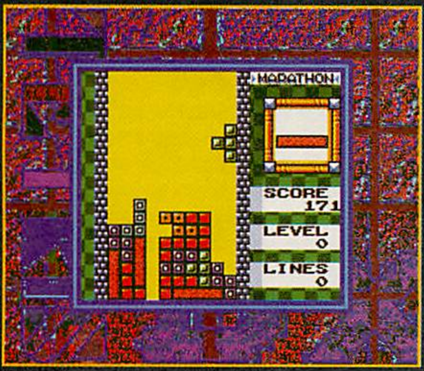
Welcome to yet another packed edition of Game Show. Among the many highlights this month are an interview with gaming guru, David Braben, along with a full preview of the long-awaited *Skirmish*.

Before I move on to the big boys this month, there's just time to mention *DStar*, an Acorn conversion of a popular TI-86 classic from yester-year. It's a small but fun puzzle game of the same genre as *Plig* from Skullsoft. *DStar* along with some nice Doom add-on levels can be downloaded from Alex Macfarlane Smith's website at http://www.macfarlanesmith.freeserve.co.uk/

If you have internet access and would like to chatter online with other gaming fans, check out the #acorngaming IRC (Internet Relay Chat) session every Sunday evening at 9pm UK time. Regulars on the channel include myself along with well-known programmers and members of the Acorn Arcade website editorial team. More information and all the software necessary to get online can be fount at Acorn Arcade's support pages at http://www.acornarcade.com/feedback/irc.html

Virtual Gameboy

With the recent release of Nintendo's new colour Gameboy, the emulation scene has now caught up following the Acorn release of *Virtual Gameboy*. *VGB* is capable of running



TetrisDX running on a Risc PC

all Gameboy game ROMs available on the Internet and is the latest in a string of emulator releases from David McEwen. *VGB* and David's other emulators can be downloaded from his website at: http://www.lizjay.demon.co.uk/david/

VGB will run on an A5000 but you'll need at least a Risc PC to get the best out of it until the CPU core code optimisations are complete. There are also some legal technicalities which should be taken note of when downloading commercial games from the Internet.

Skirmish

Skirmish is a new home-grown game from The Kindred, a relatively new group on the Acorn scene. I use the term 'home-grown' in its widest possible sense here because *Skirmish* is, in fact, a clone of the smash-hit PC title, *Worms*. For those of you who have somehow managed to miss the *Worms* phenomenon over the past few years, the genre basically takes those tank war games of the 80s one step further by spicing up the graphics and sound, adding a sprinkling of humour then mixing it all up with some suitably meaty weaponry.

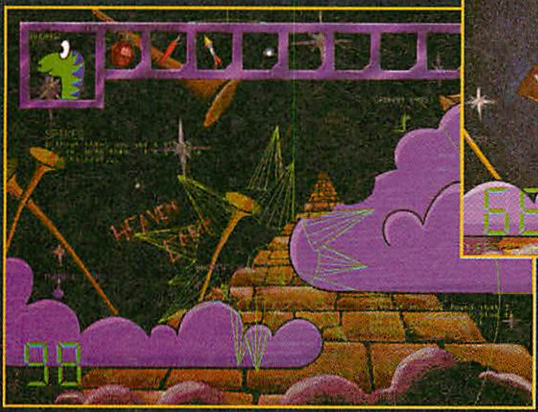
The Kindred have kindly allowed me to take a look at an early preview of the game. Release is scheduled for sometime around the time you'll be reading this but as I sit writing this just before my New Year's Eve celebrations, the game is playable although it lacks some of the features of the final version which are still being worked on.

Skirmish isn't a full-blown Dolly-the-sheep clone of its PC cousins, *Worms* or *Worms 2*. There are actually some subtle differences in the gameplay. For example, in this early version of *Skirmish*, you are allowed to fire as much as you have time to during your turn whereas other games of this genre typically allow only one shot per turn. This isn't really a major difference but, if it survives until the release version, will mean that opposing worms situated within range of each other will be able to give each other a good pasting every turn rather than missing each of five turns then just scoring a hit on the sixth.

Good humour is very important in a game of this type and *Skirmish* looks as if it'll be spot on the mark when it comes to cute sound effects and witty textual descriptions of the weaponry. Your first few games of *Skirmish* will consist mostly of trying all the weaponry available and seeing which is best in different situations. Once you've mastered the weapons, you'll then be able to focus more upon pummelling your human or computer opponent into the







ground. However, computer players are still being worked on and are not present in the preview version.

Skirmish uses a very nice way of aiming the projectile weaponry. A circular power bar is increased/decreased in a ring around the player while the mouse is used to give the direction of the shot.

Internet and serial link-up multiplay is currently being worked on and all being well, *Skirmish* should become a favourite among Internet users due to the excitement of multiplayer games of this type. Team members can be customised allowing each player to choose a team comprising of their most despised or liked group of friends.

The graphics in *Skirmish* are very pleasing to the eye, a number of different scenery sets are available and weather effects along with parallax scrolling of background scenery make for a very nice feel. Variable screen resolutions are also available and StrongARM users will be able to use resolutions of 640 by 480 and above whereas owners of less well-equipped machines will be limited to the lower resolutions.

Many Acorn games feature menus which look as if they were just after-thoughts once the main game had been produced. However, the menus in *Skirmish* are accompanied by a colourful animation of the characters fighting and throwing all sorts of things at each other. OK, so it's not quite up to the standard of the PC *Worms 2* intro sequence but still, it's a very promising start.

A demo of *Skirmish* will be appearing on a cover disc very soon so watch this space.

TEK and BotKiller2

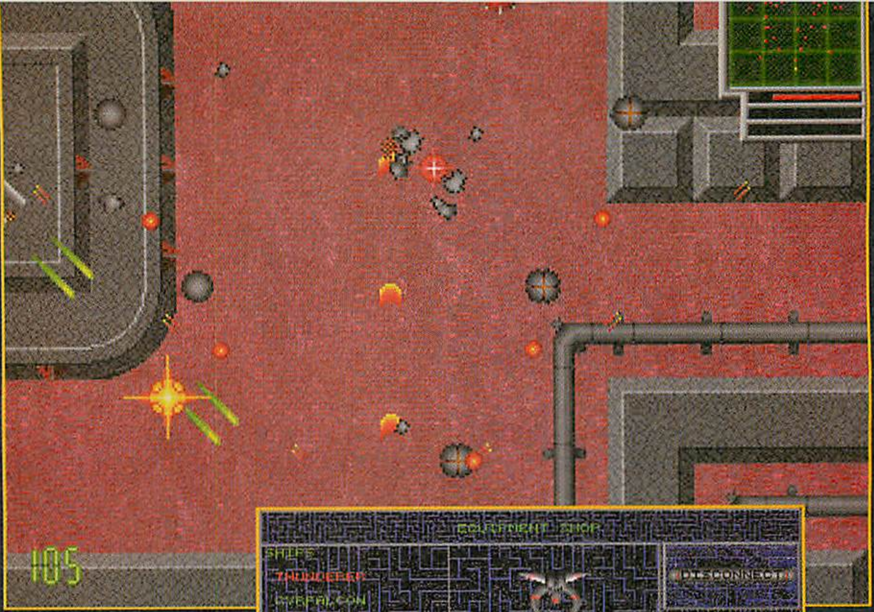
Jan Klose, our man in Artex, has assured me that work is still underway on both *TEK* and *BotKiller2*. In case you haven't heard, *BotKiller2* is the budget sequel to Jan's popular freeware title, *BotKiller*, which graced an *Acorn User* cover disc last year. The game

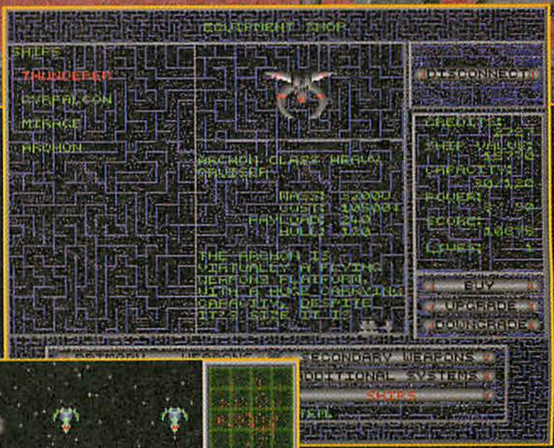


A peek at what's to come in TEK

will sell for around a tenner and should be released very soon now.

TEK is Artex's new real-time strategy game and although I've only seen a very early preview of the game's engine, I can assure you that this title will be one to look out for in the summer of 1999. A full preview should be coming your way next issue but for the time being, there should be a nice screenshot of the demo somewhere near these very words.







Xenocide Review

Xenocide is a new shareware release from Skullsoft, the producers of both *Arya* and *Plig*. Although *Xenocide* is just another vertically scrolling shoot 'em up, it features a number of enhancements which push it way in-front of its ZX81 competition.

One such enhancement is the inclusion of a proximity scanner to allow the easiest route through the alien masses to be quickly calculated. Peripheral features aside, *Xenocide* is indeed a very playable and perhaps even addictive game. The game's graphics and animations are by no means stunning but they do all fit in with each other to improve the look and feel of the whole game.

The team working on *Xenocide* have got the speed of play just about right. Some early pre-release versions which I saw did slow down as the action built up and one was very slow overall but all of those problems have now been ironed out in time for the release version. The game offers a wide variety of alien scum which must be eradicated by whatever means. Ground units such as tanks, mines and big guns are all present along with different flying nasties for each episode.

As is customary with this genre of game, each of *Xenocide's* levels hosts an end of level baddy followed by the mother of all aliens right at the end of the whole game. This inclusion is a nice touch because it gives you something to work towards during the level since lives must be maintained in order to overcome the beast when the time comes.

Xenocide even has something for the shop-aholic in you. Credits are collected from destroyed alien ships during the game and spent in the shop between levels in a similar way to other games such as *Xenon2*. However, the shop is far better than that in *Xenon2* because a very wide range of power-ups are available and even Saddam Hussein would be filled with glee at the sight of some of the higher-end weapons.

The well organised menu system along with the pumping music at the start of the game are the icing on the cake here. *Xenocide* is well worth its mere £8 registration fee (or £6 if you are already a registered user of *Arya*). The unregistered demo version is available from Skullsoft's website (see box for details), this only includes the first two levels of the full version.

Product details

Product:	Xenocide
Price:	£8 (£6 for registered users of Arya)
Supplier:	Skullsoft, 27 Tollemache Rd, Claughton, Birkenhead, Wirral L43 8SU
E-mail:	chris@eganc.demon.co.uk
www:	http://www.eganc.demon.co.uk/

Being elite

Interview with David Braben

David Braben is one of a handful of programmers who started out on the Acorn range but went on to greater glory in the foreign lands which we call PCs and consoles. David co-authored the original smash-hit BBC *Elite* followed by *Zarch* on the Archimedes before going on to produce the sequel to *Elite, Frontier Elite* on the PC. David and his team also took *Zarch* to many other platforms under the alias *Virus* and its latest strain, *Virus2000*, is selling well both on the Sony PlayStation and the PC.

We spoke to David just after he'd shown interest in producing an Acorn version of one of the latest hits, *Virus2000.*

AU: *In a post to the comp.sys.acorn.games newsgroup at the end of last year, you appealed for anyone interested in a conversion of* Virus2000 *to the Acorn to e-mail you. How many people contacted you just to say "yes, that would be good" and more importantly, how many interested developers/programmers approached you?*

DB: It was an interesting survey. The number of real Acorn "votes" marginally exceeded the number of Macintosh votes, which was a surprise, though there were a far greater percentage of false e-mail addresses and multiple entries, which to me suggests piracy would also be far greater. Three people approached us offering to do the version.



Zarch, classic Archimedes 3D action

AU: *Do you still own or use an Acorn machine now that you're working mainly on PCs and Consoles?*

DB: Yes. I still have several Acorn machines, but sadly no I don't use them regularly.

Back in 1987 I was really keen in using high-end Archimedes as development hosts for other platforms, and a number of other developers were very interested too. This interested started before the Archimedes was released and I approached Acorn with a view to incorporating a number of features into the machine to make cross development easier.

For those who don't know what I'm talking about, cross-development is where you do all your programming/compiling/editing on one machine, then squirt the raw data to another machine via a cable. This way you can use a more powerful or more reliable machine as the host and not have to reset the machine if your code crashes. We did this using a BBC Micro for Commodore 64 *Elite*, for example, and amusingly Commodore themselves used BBC Micros as hosts for the Amiga in the early days.

My thoughts were that if we put a high-end Archimedes on the desk of every developer, which supported cross-development for the Amiga, Atari ST, Sega Megadrive, Nintendo, BBC Micro and so on, we would also perhaps get Archimedes support for those games. Acorn management were cool on this, but the individuals were all for it, and Sophie Wilson unofficially let us have the source to BBC BASIC and we integrated the features we wanted. We did this in an upwardly-compatible way using the built-in assembler, but it was possible to switch processor type to compile for processors other than ARM. It made little difference to the size of BASIC.

We did not want any money for this, all we wanted was for it to become the officially supported version of BASIC so we could safely start using these features in our code. We also wanted to be able to give it to other developers for which we would need Acorn's permission. Acorn management said to us (still unofficially) they did not want to support other people's machines. I was very disappointed with Acorn, and at that point on I moved to the PC. The sales of high-end machines to developers alone would probably have been significant.

AU: *Which of your games so far has been the most successful both sales-wise and from a financial point of view?*

DB: Sales-wise *Elite*, financially speaking, *Frontier.*



Virus2000, Zarch for the next millennium

AU: *Purely from a development point of view, which of the platforms that you've worked with is the easiest to produce games on?*

DB: It moves with the times. At the time Acorn definitely won out on this. Firstly with the Atom, then the BBC Micro, then the Archimedes. Now the quality and quantity and reliability of the PC tools is such that the PC is probably now the easiest, despite its complexity.

AU: *As a relative outsider, do you think that the Acorn gaming scene has any sort of long-term future?*

DB: Sadly, no. At least not unless something pretty dramatic happens.

AU: *Andrew Rawnsley of R-Comp Interactive has done a good job recently in getting a host of major titles converted to the Acorn platform. What is the general opinion within the industry of the Acorn platform?*

DB: Many haven't even heard of it. Bear in mind that even the BBC Micro didn't really make it outside Britain. Those who have heard of it didn't realise it is still going. The games business is now very international and Britain is just one territory in many.

AU: *Thank you for taking part in this interview, do you have any parting comments?*

DB: I do hope the Acorn platform survives. This is partly why I'd like to support it, so good luck!

Some sobering thoughts from Mr Braben there then. See you next month for another packed issue, in the meantime you can contact me by e-mail at games@acornuser.com or by snail-mail via the usual editorial address.

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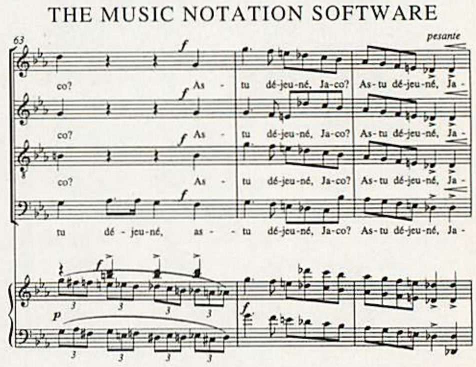
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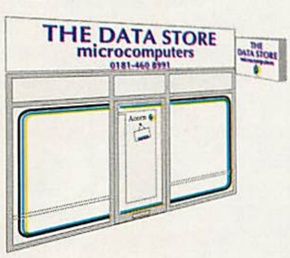
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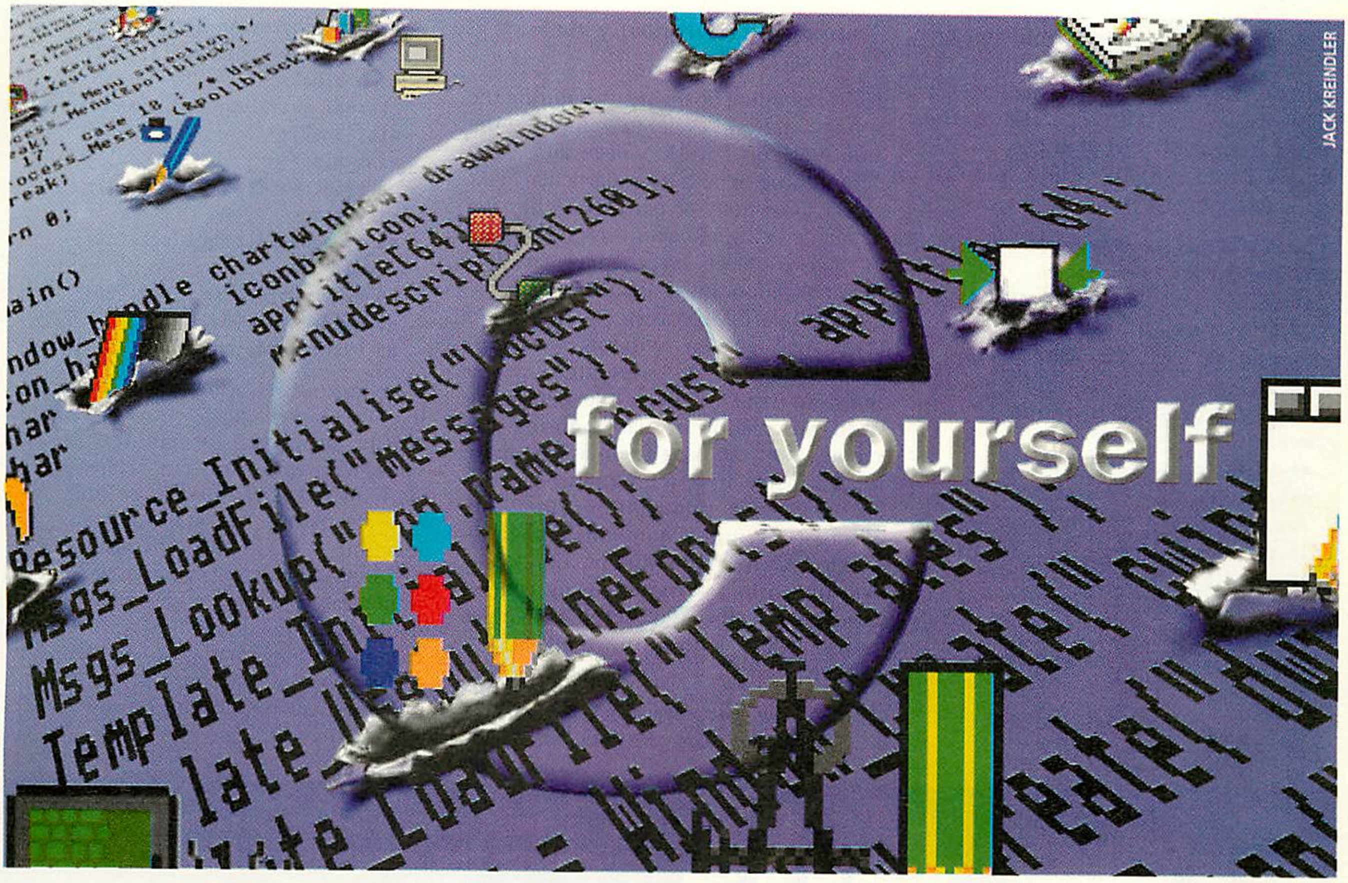
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Redrawing windows and plotting fonts in practice – **Steve Mumford** walks you through

Over the last few columns, we've looked at a variety of RISC OS programming techniques including font manipulation and data storage. This month, I've put a few of those ideas into practice, and an example application should be included on the cover disc. It's fairly simple in operation; the program installs an icon on the icon bar and allows you to open a window, initially blank.

Clicking with the Select button in the window inserts a short string of text in *Trinity.Medium*, giving the window-relative *x* and *y* coordinates of the bottom left hand corner of the text object. Clicking on an object that already exists changes its colour. Window refreshing is partially optimised, in that only text objects that have been obscured are painted back onto the screen during a redraw operation. Finally, mode changes are recognised and dealt with accordingly; font handles are reassigned at the correct resolution so that the aspect ratio of the text doesn't alter.

There are several features of the example application that are worth looking at – firstly, I've collected some of the important program variables into one structure, which just keeps them in one place and has the advantage that you don't have to hunt through the source code to make any fundamental changes.

```
typedef struct {
int RISCOS_Version;
int Task_Handle;
int Iconbar_Icon_Handle;
int Quit_Flag;
int Current_Menu_Flag;
int Printing_Flag;
char Application_Name[255];
char AppFilePath_Name[255];
char AppSprite_Name[255];
} ProgramVariables;
```

I've also created structures that hold all the information we're likely to need to be able to display a line of characters in a chosen font – the first structure, **FontObject**, holds the details for just one string, and the second, **FontObject_List**, allows us to hold a number of those objects in the form of a linked list. For the sake of simplicity, these font objects are limited in the length of text they can store, but of course with more complicated constructor routines, this limitation can be removed.

```
typedef struct {
int Font_Size;
int Font_Resolution;
int Font_Flags;
int Font_Handle;
unsigned long int bg_colour;
unsigned long int fg_colour;
int x;
int y;
int x_min;
int y_min;
int x_ext;
int y_ext;
int Selected_Flag;
int LabelID_Flag;
char Font_Name[255];
char Text[255];
} FontObject;
typedef struct FontObject_List {
FontObject FontObj;
struct FontObject_List *next;
} FontObject_List;
```

The start of the linked list is pointed to by the variable **FontObj_List_Root**, and any additions are inserted at the start of the list – to make the process easier, the function **add_fontobject_item()** automates a couple of procedures, including the acquisition of an initial font handle and an approximation of the bounding box of the string.

The latter was calculated using the SWI **Font_StringBBox** – this is by no means an ideal method as rounding errors can creep in, but it demonstrates the general idea quite nicely. The only thing you have

to remember is that the coordinates are returned in millipoints, so the SWI **Font_ConverttoOS** comes in handy – the following chunk of code finds the minimum x and y coordinates of the bounding box relative to its plotting origin and converts them to OS units:

```
au_selectfont(newobject_ptr-
>FontObj.Font_Handle);
in.r[1] = (int) newobject_ptr-
>FontObj.Text;
_kernel_swi(Font_StringBBox, &in,
&out);
newobject_ptr->FontObj.x_min =
out.r[1];
newobject_ptr->FontObj.y_min =
out.r[2];
...
in.r[1] = newobject_ptr-
>FontObj.x_min;
in.r[2] = newobject_ptr-
>FontObj.y_min;
_kernel_swi(Font_ConverttoOS, &in,
&out);
newobject_ptr->FontObj.x_min =
out.r[1];
newobject_ptr->FontObj.y_min =
out.r[2];
```

These bounding boxes are used during the window refresh cycle to minimise the amount of work necessary, by determining whether a particular text object lies wholly or partially within the rectangle being redrawn – re-plotting all of the text objects every redraw can slow the application down dramatically.

During this process, we need to translate between window workarea coordinates and absolute screen positions, and although the details we need are readily available during the redraw loop, we have to do a little more work outside it if we want to get our hands on the same information. The **Wimp_GetWindowState** function allows you to determine the window coordinates and dimensions – the following code is used within the routine that handles mouse clicks within the application's main window:

```
unsigned char temp_block[255];
_kernel_swi_regs in, out;
au_wordtobyte(win_data[0].win_handle
, temp_block, 0);in.r[1] = (int)
temp_block;
_kernel_swi(Wimp_GetWindowState,
&in, &out);
visx_min =
au_bytetoword(temp_block, 4);
visy_max =
au_bytetoword(temp_block, 16);
scroll_x =
au_bytetoword(temp_block, 20);
scroll_y =
au_bytetoword(temp_block, 24);
```

There's another aspect of C that I'd like to cover next month, namely calling functions by pointer. In the same way that you can reference the start of an array by a pointer, you can also store the start address of a function as a pointer. This allows us to perform a few useful tricks that will enable us to create a stronger application skeleton while retaining enough flexibility to allow custom-written handlers to be added to the core of the program. We'll be looking at these next time round – hope to see you then.

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- Sibelius 7 v3.04, *Impression Style* v3.07, A7000 + MIDI interface + monitor. Roland PC200 silent MIDI keyboard. Manuals. £600, will split. Tel: 0181 223 0697. John Strange (London NE).
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1998 Comedy Award Nominees **Dave Lawrence** and **Dave Acton** present...

star info

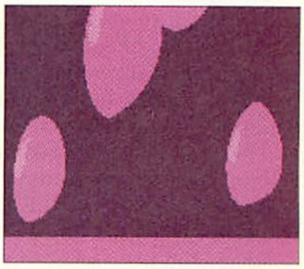
Lava minute

Author: Scott Boham

Our continuing mission to seek out the most convincing lava lamp takes another step forward with the aid of long time contributor **Scott Boham**. In Scott's words, this implementation may not be as technically accurate as Rob Jeffs offering in October '97, but it does use bezier curves.

It uses a drawfile called *Blob* which contains a rough outline of a lava blob. Four of said blobs are made to rise and fall slowly from the pool of lava at the base of the lamp. The blobs are animated by fiddling about with their control points; as everything is bezier-based, this produces a nice wobbly bulbous effect. This is all achieved in a surprisingly small number of lines of BASIC and one call to the DrawFile module.

Now all we need is some cunning merging/splitting algorithm and Ummagumma on the music centre.

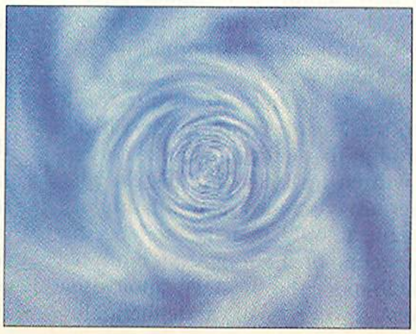


The late arrivals for the tunnel ball

Author: Mark Hills

This program is **Mark Hills'** rather late submission for the Tunnel competition. Run the program by double-clicking it, and leave it to calculate the three tables, it's worth the wait. Once the tunnel is displayed, moving the mouse upwards will increase the speed, and downwards will decrease it, eventually reversing the direction. You can also use the three mouse buttons to change the pattern – Select gives a plain tunnel, Menu is like a plughole, and Adjust is a more complicated bendy-plughole thingy.

"The original program was written in C by James (Pharaoh) and Tim (Fisken), to run under Linux. It ran okay on James' 486 superfast machine, and Tim's Pentium 100 but, surprisingly enough, was incredibly slow on my A3010. I rewrote the program using a mixture of BASIC and ARM code, with the help of James, and tidied it up quite a bit, although since I'm not very experienced in ARM code, this part can probably be improved. The result is fairly good and will hopefully go nice and fast on a StrongARM processor.



"It requires a 256 by 256 sprite, 256 colours, with no mask or palette, and the filename of it can be altered at the start of the program. This can be any picture required, although I have provided one generated using the 'Cloud Cultivator' program on the July disc.

"The program works by first calculating the distance and angle tables. The first works out how far away each pixel on the screen is, the second works out the angle which each pixel is at. These tables are used to calculate the pattern table, which finally works out where a point on the screen will translate to on the sprite. The machine code then repeatedly plots the screen, cycling the sprite around. This is done directly to the screen, without using any other screen banks.

"The screen mode can be altered at the beginning of the program, although it must be kept as a 256 colour mode with square pixels. The higher resolution the mode is, the longer the program takes to calculate the tables, and the more memory required in the 'next' slot."

*info

From D to D via A and G

Author: Graham Brooker

As something of an antidote to the rave-y tracker files we feature from time to time in *INFO, here is a little musical offering from another age entirely. It was created in a rather unusual way by **Graham Brooker**, a proper real-life grown-up composer.

A while ago we published a little ditty called *Expound* which randomly expanded sentences. It occurred to us at the time that the program might be persuaded to generate music. Graham came up trumps, and for his inspiration returned to the modes of ancient church music. The results are quite extraordinary considering the random element involved.

"Basically, what I did was compose seven short motifs, one for each note of the scale, and experimented a bit with the recursion rules until running the file through *Expound* gave me a reasonable number of notes! I then transcribed the result into *!Sibelius* and exported it as a MIDI file.

"To make things a bit more interesting the D which starts everything off is held throughout as a pedal note or drone, while I made the pitch of the melody tend to rise up the octaves as the levels of recursion got deeper. From time to time other notes are held on for a while to provide extra harmonic support.

"To my ears the result is surprisingly pleasing – perhaps with a 'close encounters' flavour, or maybe that's just the sound I chose. Anyone is at liberty to experiment with the MIDI file in whatever way they choose. I've also included the *!Sibelius* file, though of course that won't be a lot of use to non-*!Sibelius* users.

"The title 'Dorian Loops' was the best one I could think of (the piece is in the Dorian mode, i.e. a scale of all the white notes starting on D)."

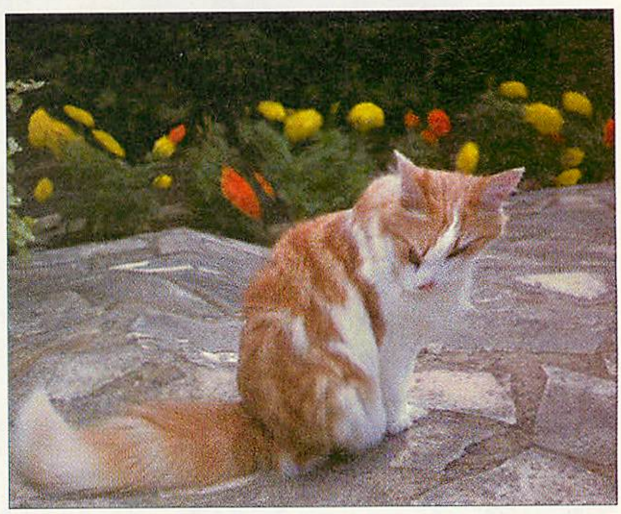
The *!Sibelius* and MIDI versions of Graham's expounded masterpiece can be found on the cover disc, and here are the simple definitions that were used to produce them:

```
"D"   (D "A" "D" "C" "G" B "A")
"A"   (A B "G" E "A")
"B"   (B G "A")
"C"   (C G "C" B G "D" G)
"E"   (E "D" F D)
"F"   (F A "C" "B" G A)
"G"   (G "D" G "F" C "E" C D)
```

Scott of the art antic

Author: Scott Boham

The idea behind **Scott Boham's** *Distort* is surprisingly simple – so simple in fact it's quite remarkable nobody's done it before. Well, not in *INFO anyway. Load the app (it sits on the iconbar) and drag in an 8pp sprite file. 640x512 is best, but any size <400K will do. If you don't have a suitable image to hand, Scott has provided a photo of his cat Suzy.



The sprite is divided up into little squares and overlaid with a grid. You are then free to drag any of the grid points around the screen and the program will distort the squares as appropriate. The program very deliberately limits the movement of the control points to ensure the squares aren't stretched to much beyond acceptable parameters. Scott has also included a demo distortion – *Suzy!*

The grid can be removed by pressing G (although for some reason it doesn't always seem to manage to remove all pixels of the lines which is a shame) and the screen can be saved by pressing S. This will save a sprite file called *Distorted* in the current directory.

Faces (and pets) seem to work particularly well. I even managed to reduce our cat Bungle's rather portly undercarriage to more conventional dimensions.

Draw, loose... and win!

Author: Dave and Dave

Our new challenge kicks off here but before we start we'd like to introduce you to the newly adopted *INFO mascots Rin (the dog) and Fatso (the cat). You can imagine how much mischief these two get up to around the office – they run round and round in loops; get stuck up branches; and leave little malloc'ed blocks in the oddest of places. You can find pictures of Rin and Fatso on the cover disc. These are obviously only Crimewatch-like rough sketches; Fatso is really *much* fatter and Rin's wig isn't quite as obvious.

These drawfiles form the basis of our next challenge. All we'd like you to do is to take these drawfiles and do something "interesting" with them. The only real rule is that you must keep them in their vector format so no rendering them to a sprite and then just manipulating a bitmap. To give you a start we've regressed twenty years and recreated the timeless animation style of *Roobarb and Custard*. All that's missing is the theme tune "duddly-dow duddly-dow duddly-djee-djee-dow" – get the full thing from http://www.tardis.ed.ac.uk/home/bjm/Sound/Snds/Kids_TV/

Run *!Here* to set the current directory and then run *RandC*; type 'Rin' or 'Fatso' at the prompt to see the effect. The entire prog is written in BASIC and because of the rather heavy-handed manipulation of the drawfile it only manages ten or so frames a second on a StrongARM, but it is fast enough to see the effect. We apologise to non-SA owners. We've deliberately given you a very brief brief to encourage as many interpretations of the rules as possible. 2D, 3D, video effects, animation, Photodesk like filters – all accepted.

All we can say on the judging is that the 'best' one will win! Programs should be no larger than 50K. Entries should be sent to the usual address; please mark your envelope 'Rin and Fatso'... the closing date is 1st May and the results will be published in the August issue.

In Roobarb's shed

A large proportion of all entries are likely to be interpreting the contents of the drawfile. Please feel free to use the innards of *RandC* to get you started, after all this isn't a challenge to see who can extract the contents of a drawfile.

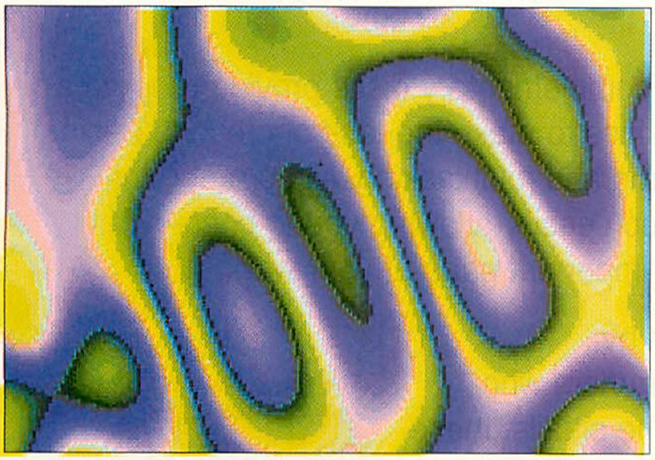
Rotoplasm

Author: Richard Wareham

We were trying to work out how many plasma generators we've seen over the years and we came to the conclusion that it must be at least two, so there'll always be space for another, especially if it's as good as this PC port from **Richard Wareham**. Over to Richard:

"A while back I was playing with a PC PD CD-ROM and found a demo (by Jan Müller & Erik Hansen) containing a rather nice plasma effect. Unusually the source for the effect was included on the disc. It was a mixture of C and 80386 assembler. I liked the effect so much that I ported it to my trusty A5000.

"The original program only ran at an acceptable frame-rate on a 75MHz Pentium and so converting it to run on my 25MHz ARM 3 was a bit tough (especially as I had to increase the resolution of the plasma from a VGA MODE 0x13 screen (320x200x256) to an VIDC MODE 13 screen). Because of this the program does not wait for VSyncs, which may cause flickering. To stop this simply say yes to VSyncs when prompted. I have also added the option of disabling the palette cycling (actually implemented as a constantly changing 'virtual palette' as, unlike the VGA, the VIDC has limited palette altering facilities in 256 colour mode). This has the effect of making the plasma run at almost full speed on my ARM 3 (with VSync waits disabled).



"On a 33MHz RISC PC, the colour cycling can be enabled without significant loss of speed, but to get up to P75 speeds, the palette cycling must be disabled. If no palette cycling is enabled the user is prompted to enter a number describing the palette. This can be any number but try some of these:

87	Fluorescent bands
75	Liquid metal
151	Rainbow

Press space to stop the program.

"To be honest I'm not entirely sure how the program works. As far as I can see, the program uses two precalculated tables to generate the effect. I think they contain the distances, etc. between points in order to interpolate between fixed points on the circumference of rotating circles. All the information I had from the source came from the original PC readme file. (This has been reproduced on the disc)

"Obviously I don't claim to have originated the algorithm but I did optimise it a tad in order for it to work (a) faster and (b) with mostly fixed-point arithmetic as opposed to the floating point that C-programmers seem to be such fans of for demos.

Rim, slime and tetra

Author: Jan Vibe

...were, the other Dave tells me, three of the less popular Blue Peter pets. By sheer coincidence, they are also the titles of the latest three doodles from Ace Euro-doodler **Jan 'Doodle' Vibe**.

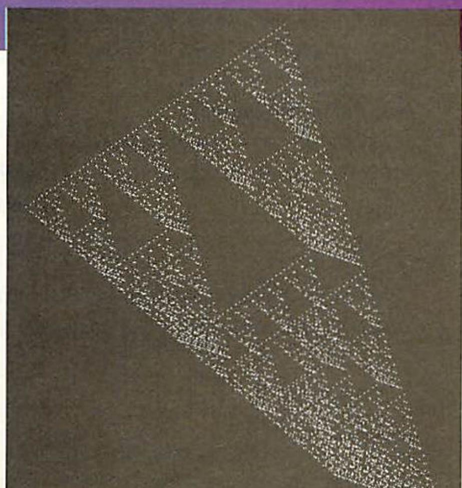


"You have often called my programs doodles. [See above – DA] This program is a real doodler. When started, it shows a blue screen and the pointer. You can draw by holding the left mouse button down and move the mouse. The middle mouse button clears the screen, and the right button starts the process. This involves making a rim around whatever you have drawn, and after that, making a rim around the rim, and so forth until the screen is filled with rims. You can make some great signs using this program (I think)."

Slime gets its name from the slime mould the author thinks it resembles. More brainlike than slimelike we think in the *INFO office, but who are we to say. This is in fact one of Mr Vibe's more seasoned programs, although it has recently undergone something of a revamp for the Risc PC. You will feel the benefit of a StrongARM in running *Slime* although to be fair, slime mould is not renowned for its gazelle-like sprinting ability.

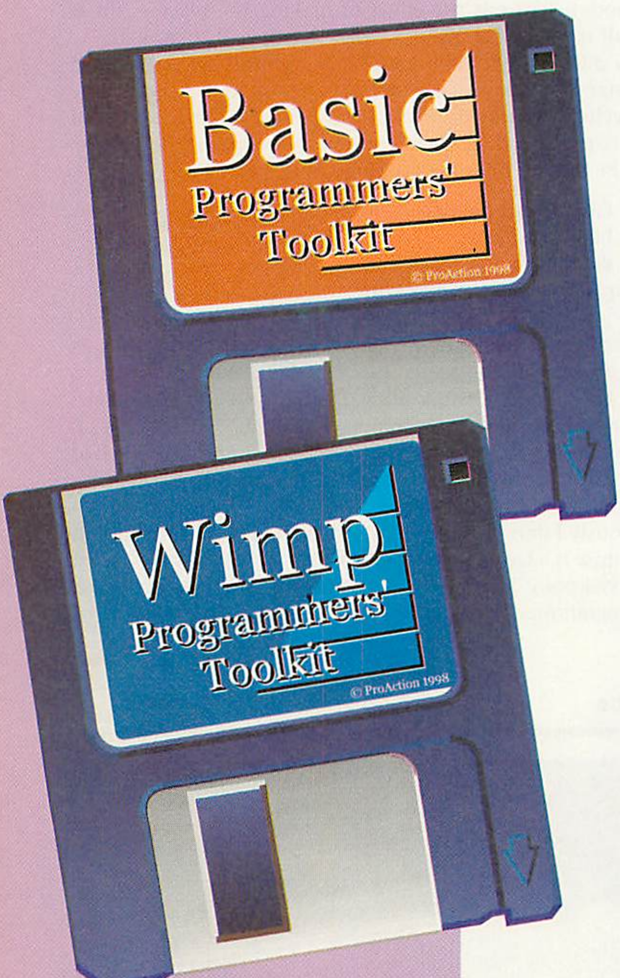


Finally we come to *Tetra* – the Blue Peter plutonic solid. In fact, this is all just another excuse for some Sierpinsky Gasketry, although there is the 3D novelty value to treasure and enjoy with Jan's version.



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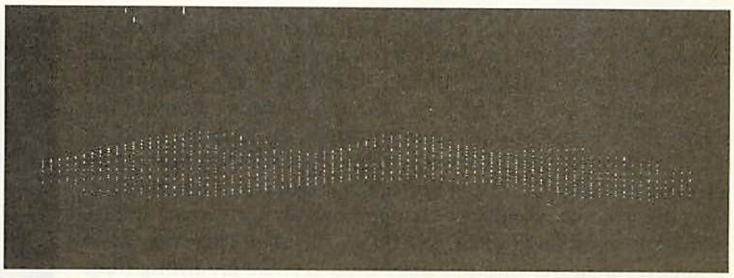
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Picture yourself in a boat on a river... **Author: Dean Alexandrou**

Actually, picture yourself by a river in a light breeze watching a football bobbing up and down, and you'll have pretty well captured the essence of this simulation from **Dean Alexandrou**.

"Surfing is a rolling-sine-wave type landscape with a ball that sits on top of the water". It's a humble three lines long, and will run ludicrously fast on a StrongARM machine so you will need to add something like **i=INKEY(10)** before the final **UNTIL** if you don't want the speed garage effect.



Triple ripples **Author: Mark Daniel**

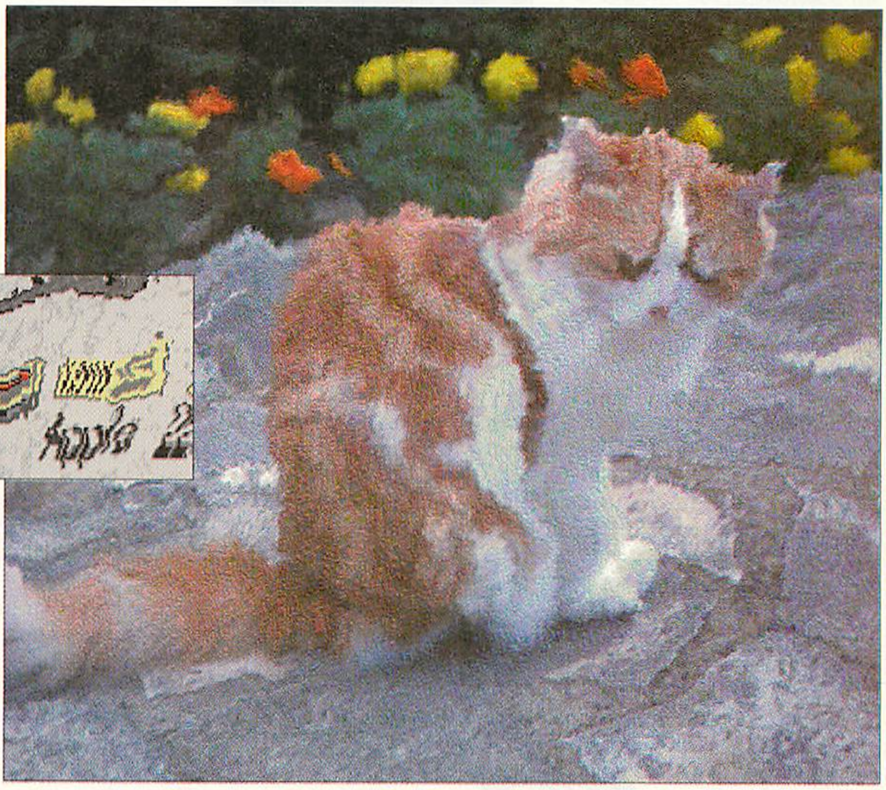
A trio of ripply entities now from yet another Mark – **Mark Daniel** of Walsall (a.k.a. the Mad Cow apparently). 13-year-old Mark (probably at least 14 now I shouldn't wonder) was inspired by none other than the amazing Mr Vibe and uses the cornerstone of many a Vibe-ism – the **RECTANGLE MOVE**.

Ripple1 requires a sprite to do its stuff. You could try the sprite of poor Mr Boham's cat – this works very well, although I think we might be reported to the RSPCA shortly. Like the code of his mentor, everything is quite minimalistic – just a single line for *Ripple1*. At the heart of the program are a couple of RND statements. These are currently **RND(4)-2** which leads to a general picture drift to the top right. If you would prefer the image to wobble about but remain mid-screen, try changing these to **RND(5)-3**.



Ripple2 is a single-tasking desktop version. That is, it just doesn't ask for a sprite – instead it will mangle whatever happens to be on the screen at the time – usually the desktop. As you might expect, this prog is even shorter and you can alter the RNDs in the same way as above. Press Escape to exit.

Finally, *Ripple3* is an all-singing all-dancing multi-tasking rippler with some Wimp code from Mark's brother. (We don't know what he's called, although we suspect that his name is neither Mark nor Daniel, so that narrows it down a bit.) Quitting must be done from the Task Manager window, which can prove a bit tricky. You can always press F12 then Return to deripple the screen a bit though.



Scroller flair **Author: Mark Adcock**

Although this tiny 128-byte piece of code from **Mark Adcock** does nothing but change the display start address of the screen, it is nonetheless one of the most disturbing effects we have seen for a while – run with caution. Good old **OS_Word 22** is responsible for screen-scrolling. It is called with R1 pointing to a parameter block:

byte	description
0	type
1	LSB byte of offset
4	MSB byte of offset

The type determines which out of the display hardware and VDU drivers are affected by the change. Bit 0 is set if you want the VDU drivers to use the new address; bit 1 if the hardware screen start is to change. The offset is simply the number of bytes from the base of the screen memory buffer.

Mark tells us that *128Scroll* looks best in the big screen modes (e.g. 1024x768x32k colours) since the offset passed to OS_Word 22 must be a multiple of 16. (Thus only chunky scrolls are possible in lower resolution/fewer colour modes.)

"The hardest part was getting the movement to slow down and *then* change direction rather than just changing direction violently. I think a multitasking version would be a lot of fun."

A sense of perspective

Author: Mark Adcock

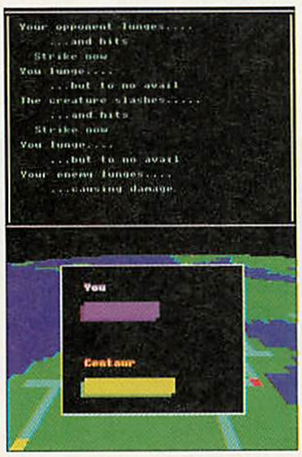


Scarcely giving your poor eyeballs any time to recover from the onslaught of *128Scroll* Mr **Adcock** follows through with *Parallax*.

"This program basically plots a 128x128, partly transparent tile on top of a 64x64 texture, and moves them around. The bigger one moves faster because it is supposed to be 'in front' of the smaller one. Closing one eye helps to create the illusion that what are looking at is 3D rather than a picture on a flat monitor. Alter the variable **speed%** to change how fast the picture scrolls. 1024 looks good on my RISC PC700 (at 70fps), but you may need to alter it for slower or faster machines. Try 720 on StrongARMs if you are getting 100fps VSync."

Circum navigation

Author: Rob Jeffs



!Circia (II) is an adventure-like game set on a circular world. It is doubtful that it is supported by four elephants on the back of a turtle as that would infringe any number of internationally recognized trademarks and copyrights. If you are familiar with games such as *!Angband* or *!Nethack*, you'll get the idea quite quickly, although the novel 3D perspective view is a step up from @ and **d**.

Rob Jeffs has not provided much background to the game, so I'm afraid you're on your own as to the ultimate goal, all we can give you is a little information on moving and interacting with the residents of Circia:

Movement across the land is by keypad. 8 is forward. 1, 2, 3, 4, 6, 7 and 9 alter your direction by varying degrees. 5 zooms out to a god's eye view. 4 and 6 allows the disc to be rotated. 5 returns to normal view.

You may enter the command line at any point in the world by pressing Enter, where the following commands become available:

EAT	Done automatically if carrying food. Force feed to heal
FONT	There are 3 for you entertainment
HELP	
HELPKEYPAD	
HOME	Creates a square where treasure can be stored without being lost
INV	Inventory of currently held objects
LOAD	Load a previously saved game
LOOK	See what's at your feet
PORT	Teleportation is available at certain towns. It is based upon the astral lobbing principle
POS	Gives you your grid position
QUIT	
SAVE	Save current game
SCORE	
STATUS	Keep an eye on this
TAKE/DROP	TAKE 5 SIL means TAKE 5 SILVER, TAKE SWO means TAKE 1 SWORD. Objects dropped anywhere but HOME will be lost when you move on.
TRADE	In the towns and cities you may trade for goods, but the towns' merchants always make a profit. If your purchase takes you over your weight limit, it will be dropped at your feet. First you will be presented with a list of goods available. Make your selection by using the keys: 8,2,4 and 6. Press Enter when your selection is complete. Next, you must select those items you are carrying which you are willing to trade in. Keep on offering until the merchant accepts, otherwise there will be no deal. Press Enter to seal a deal.

You won't get far in this game without lopping off a few heads:

4 – Strikes opponent with a conventional weapon
5 – Lightning
6 – Fireball
8 – Dragonfire
2 – Run away

The roads are safe and are traditionally known as the *Way of the Wimp*. The main continent is far from harmless, but some of the surrounding lands are downright lethal. It is advised that you arm to the teeth before venturing too far abroad.

*QUIT

All submissions if you please – applications, doodles, hints, tips, graphically distorted pets etc to our usual abode:

***INFO, *Acorn User*, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP**

or, e-mail us (including your real address please) at: starinfo@acornuser.com

No e-mails longer than 100K please. Screenshots, background info and customisation ideas are always most welcome. Please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. An SAE will ensure your discs are returned. If you are responding to one of our challenges, please mark your envelope accordingly. *info submissions only please.

In memoriam

This month's *INFO is dedicated to the memory of Graham Brooker who died shortly before this issue went to press. Graham's wife Jennifer said she was happy for Graham's musical composition *Dorian* to be published as planned.

I'm sure our readers will agree that there couldn't be a more poignant and appropriate tribute to a valued contributor. We know that all our readers will wish to join us in sending our sincerest condolences to Jennifer and family.

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Education news

BETTer than ever?

MUCH had changed at this year's BETT. Not only has the venue changed to the Grand Hall at Olympia but the opening address was given by Charles Clarke (Education Minister for ICT) not the Minister of State for Education, David Blunkett.


Charles Clarke – Education Minister responsible for ICT)

More importantly the feel of the show had changed with only a few technology exhibitors, the vast majority being computer companies displaying their latest CD-ROMs. Inevitably, I suppose, the words Acorn and RISC OS were less in evidence, though support for existing machines and new developments was still solid.

A new area had been added too called the ICT Teacher Training Centre where you could try out the training likely to be available when the £230m of lottery money to train teachers to use ICT becomes available.

But has BETT become just another PC show? I'd say no as the thing that struck me most was how unimportant the hardware is becoming in certain sectors.

True all the computer manufacturers were stressing reliability, network capabilities, easy (specially designed) interface, security features and so on, but all stress that they are providing *solutions* not computers. An essential part of every solution is the Internet which brought me to what I thought was the most interesting development of the year.

Following on the back of UK Net Year and the NGFL bids, developers are more serious about their use of the Web not as a mere marketing tool but as route to a quality product where you don't have to limit yourself to one platform, distribution worries and upgrade paths so cutting down greatly on development costs.

A good number of these resources are free though the trend seems to be towards subscription services. However, what concerned me most was the continuing trend away from producing anything that wasn't Maths or English-based and in tune with the National Numeracy and Literacy Strategies.

BETT'99
The Educational Technology Show

Web access

Anglia Campus

www. angliacampus.com

With resources drawn from BT's CampusWorld and Anglia Interactive, content modules cover all subjects from Maths to Science at primary and secondary level with links to the National and Scottish 5-14 curricula as well as modules on PSE, RE, Environment, Careers, Business Studies and Health Education. Added to which there is an ongoing programme of online interactive events to take part in.

Clearly presented, these modules provide copyright-cleared text, photographs, video and animated diagrams to teach difficult concepts,while a glossary of links give access to other Web sites for further information or activities. New content is added on a weekly basis although you can keep up with the free CD-ROM which arrives on your desk each term ready to be put on a standalone machine or school Intranet. Subscription costs start at £120 for a primary school licence.

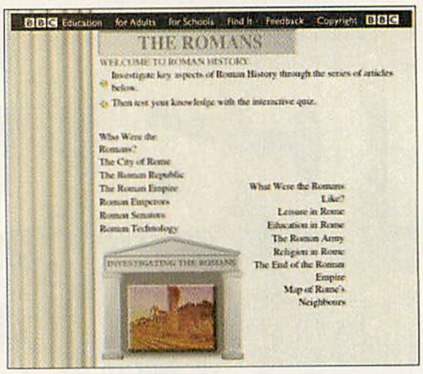
BBC Schools Online

www.bbc.co.uk/schools

There to support their Schools television broadcasts, you'll find sites supporting the Look & Read and MegaMaths programs (software is available from Longman see below). You'll also find the GCSE Bitesize revision pages covering 11

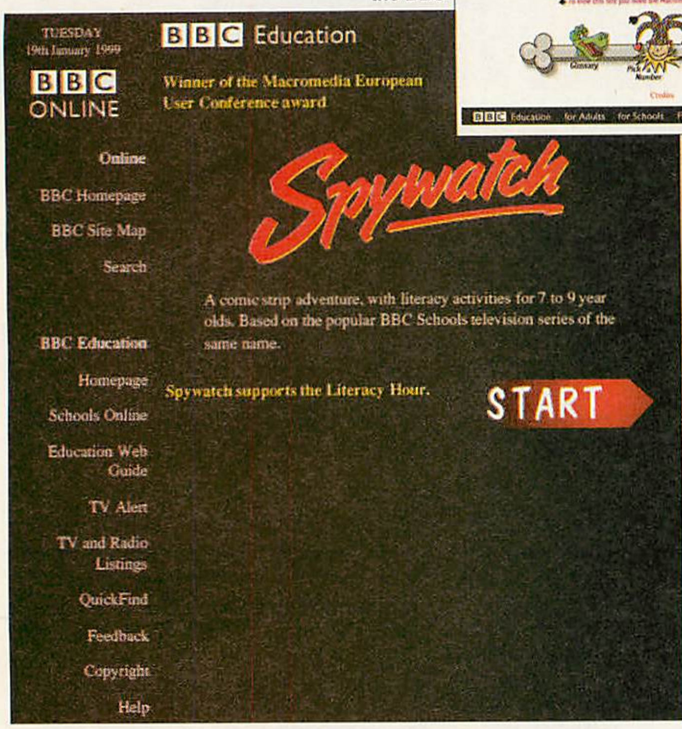
core subjects with revision notes, test questions, tips and a chance to ask online teachers for help. Then there are the DynaMo pages. Both sets of pages fit with BBC-produced books, videos and TV broadcasts. However, less well publicised are a number of other sites with useful contents for history to PHSE, science, geography and maths as well as a teacher's forum. And it's all free.

Furthermore, they've incorporated BETSIE – BBC Education Text to Speech Internet Enhancer – which needs a prize for most convoluted acronym but works in conjunction with text-to-speech software and synthesiser to make access easier for those with visual impairment problems.





Websites from the BBC



Galaxy Kids

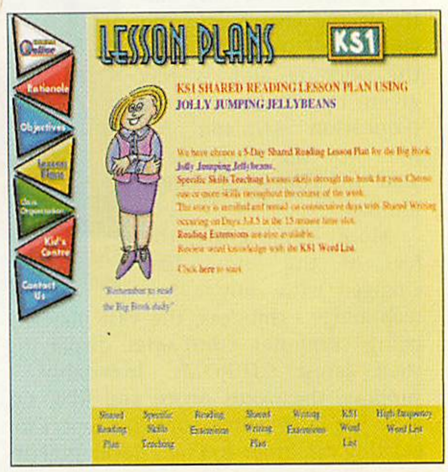
www.galaxykids.com

Aimed at pre-schoolers this is a home-learning library for English and Maths. The books are fully down-loadable as 52 weekly part-works. Based around a story there are 2,000 activities to be played over the year as well as songs and rhymes, an interactive alphabet, homework activity sheets and advice for parents. The developers have also written it for children learning English as a second language so this parental support is given in other languages too. Furthermore, there are four English language editions available – British English, American English as well as New Zealand and Australian.

Sunshine Online

www.sunshine.co.uk

Ideas and activities to help with the Literacy Hour based on the Sunshine books can be found here. A new set of activities and books are published online each month on shared, guided and independent reading, writing and language skills. Even better news is that it's free.



A B C add 1 2 3

Topologika (01326 377771) were telling teachers to DO I.T. with their **Numeracy Pack**. The first in this new range of products to be released, it offers four activities designed with the Numeracy Hour and Key Stage 1 and 2 in mind. There's Sort IT using Venn and Carroll diagrams, Count IT (to 10 or 100), Place IT (place value from units to hundreds) and Sum IT which looks at addition, subtraction, multiplication and division to 100. One of the rare new products available on floppy disk this costs £20 and allows teachers to control the timing and scoring options as well as a special Freddy Teddy option for younger users.

Primary Literacy comes from Anglia (01268 755811). Level 1 is targeted at 5 to 7-year olds who are guided though the program by fuzzy-felt characters in the form of a robot, pirate and wizard. Word, text and sentence level work are all covered which each character taking children though five fun and interactive activities from creating a book using a branching story, to muddle activities and traditional games of Snap and Bingo – all supported by photocopiable worksheets. Level 3 is also available for 7 to 8-year olds and follows a similar format, as does **Primary Numeracy**.

Levels 1 and 3 are divided into Applying Mathematics, Number Work and Space, Shape and Measure and follow the National Numeracy Strategy ready for this September's implementation. Familiar games like Snakes and Ladders are given a new twist to help children improve their skills, while interactive characters help you extract data from a text to work on data handling skills. Both Levels have the added features of a calculator and a glossary of mathematical terms. Each Level is priced at £50.

MegaMaths Tables comes from Longman (01223 425558) and £39 will buy you games to help Key Stage 1 and 2 learn their tables up to 10 x 10. Set in a castle children can explore the different rooms but each time they enter a new location they have to face

a mathematical challenge or puzzle with Digit and Brimstone on hand to help. For instance, in the Wizard's Room you'll have to know your multiples of two while the ballroom will test your knowledge of the nine times table. Succeed and you get a key to another room.

The Numbertime and Numberland series from Longman has a new addition **Numbertime 11-20.** Supporting the NNS and the Spring '99 BBC School Television broadcasts, the Numbertime characters are back to help with six activities to help learn and use numbers 11 to 20. Sequencing, patterns, counting in tens and units, addition and subtraction, counting in multiple steps, looking at factors and prime numbers are all covered for £27.

Number Works takes the form of a maths adventure and comes from the Sherston (01666 843200) stable. The problem is simple, UNIT and his friend cannot get the factory to work as it's full of cranky old machinery. Aimed at 8 to 9-year olds, this £49.95 CD-ROM provides a range of tasks covering place value to approximation, number patterns to division facts and remainders, fractions to simple decimals, all at three levels of difficulty.

They've also come up with a **Numeracy Compilation** on CD-ROM. For £40 you get *Table Aliens, Sea Rescue* and *Space City*. Still available on floppy for £24.95 each this is good value if you haven't got these packages which provide an adventurous way to learn about tables, fractions and angles.

Smudge's Times Tables in Space from Storm (01935 817699) is the latest outing for this cute puppy costing £25.99. From the Launch Pad to the Stars, 5 to 11-year olds with be guided from the 0 to the 12 times table via a range of bright and fun games. Starting with a tutorial to reinforce tables using the look-hear-do approach there are seven activities from a jigsaw to a Flash Quiz. Progress can be monitored as children progress at their own speed.

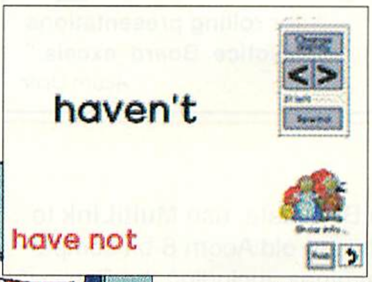
WordWork from Resource (01509 672222) provides word level work for the Literacy Hour organised in week-by-week sections for whole class, individual and group work. WordWork 1 provides over 40 activities for Key Stage 1 as outlined in the NLS with wordlists covering CVC words, phonemes, blends, onset and rime. The built-in wordlists do most of the work for you but you can create your own with the dictionary search option. WordWork 2 naturally covers Years 3-6 with similar activities supplemented by work on poetry construction, alliterations, contractions, use of stress and so on. A nice touch is that the characters can be themed to fit it with topic work on Romans, Tudors and so on. WordWork 1 and 2 cost £45 each or £79.95 for the two.

And the rest of the curriculum

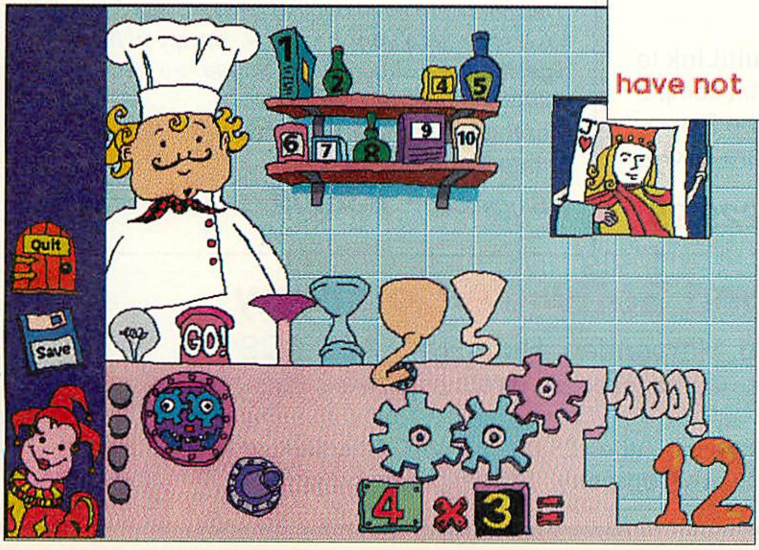
ELECTRIC Studio provides Art and Design for all ages. Section 1 gives you quality thematic resources from flowers to skeletons while Section 2 provides a wide range of student coursework examples linking the visual resources with computer generated ideas and extension work in drawing, painting, printing and sculpture. The cost is £50 from Anglia (01268 755811).

Maps and Mapping is the newest addition to the ZigZag range from Longman (01223 425558). Looking at the differences in environments of villages, towns and cities this supports the broadcasts from the BBC. Concentrating on mapping exercises with varying levels of difficulty from using eight compass points in directions, to understanding co-ordinates, map symbols, key recognition as well as plotting references to scale. Aimed at Key Stages 1 and 2 this is the first ZigZag product on CD-ROM but the price is the same as others in the range at £34.

This Week in History – The Millennium Resource Pack is a useful package from Sherston (01666 843224). Full of images and information it uses a calendar to take you on a journey through time. Choose a week and access all the information related to an event that happened that same week sometime in the last thousand years. Alternatively you can follow one of the nine topic areas: medicine and health, royalty and government, science and technology, battles and warfare, flight and rockets, surface transport, exploration, society and people, media and communication. A Key Stage 2 resource costing £40.



WordWork from Resource



MegaMaths Table from Longman

Top of the league

AN international report on ICT in schools has looked at the G7 nations – the world's leading seven economic nations: UK, France, Germany, Italy, Canada, Japan and the USA. The findings include the fact that the UK is the only country to include ICT in all areas of the curriculum for 5 to 16; and that the proportion of UK secondary schools with access to networks and to the Internet has risen to 75 per cent from 29 per cent two years ago.

Open door to science

THE Design & Technology Education Show is 22 years old and this year is set to include Science. The only subject in the curriculum to have its own national show, it has now been re-named the *Design Technology with Science Education Show* this takes place from 4-6 November 1999 at the NEC in Birmingham. For more details contact ICHF on 01425 272711.

On the move

TOPOLOGIKA have moved offices. You can now find them at 1 South Harbour, Harbour Village, Penryn, Cornwall TR10 8LR. Or by phoning: 01326 377771.

Contacting me

You can contact the Education page by writing to me, Pam Turnbull at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP or e-mail: educ@acornuser.com

How we used to live

Can a CD-ROM really show how life in Wales used to be? **Pam Turnbull** investigates

This is a very unusual CD-ROM using the resources of the Museum of Welsh Life. Beautifully produced it begins with the Welsh Legend of Cantre'r Gwaelod, a mythical country of 16 cities flooded by the sea due to the neglect of Seithenin. Now repentant he takes you through the history of houses and households.

The interface does take some work and we found ourselves returning to sections we didn't want and eventually resorted to the manual. This is produced in English and Welsh as indeed is the whole package with one CD-ROM in English and a second in Welsh. However, specific as this may seem to anyone involved in teaching Welsh history at Key Stage 2, I found it was also very relevant for English children especially when it moved on to the industrialization aspects when the parallels to what was happening in northern England are especially strong.

So what do you get? Apart from the atmospheric opening legend, the package takes you to six doors. The *Time Clock* presents a chronology of the house from the essentials of shelter and warmth to how they reflect status, culture and family. Starting at 250,000BC and the Hunter-Gatherers and Early Farmers, the Time Clock takes you to the present day. Choose your era and which aspects of the multimedia presentation you want to listen to. Rather than watch and listen, a click on the relevant icon will reveal the text of the presentation with highlighted words leading to a glossary window.

Food and Farming seemed particularly poignant considering recent events in that industry. Focussing on the farming year, you can swop between the seasons and then access farmhouse, toolshed, animals and workers in the fields to see what they are doing and how their activity has changed over the years.

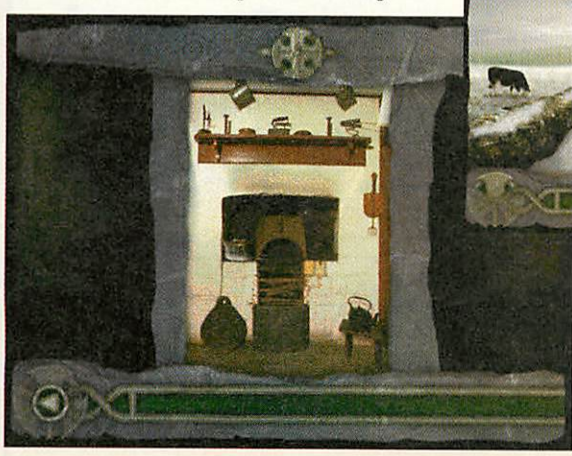
These first two sections and *Finding Out* are not as tied to Wales as the others. Finding Out divides into two: Interpreting the Past – six chapters looking at archaeology, using documents, folklore, as well as the problems faced – and Rebuilding a Welsh Cottage. This lets children explore the processes that have to be gone through before a historical reconstruction.

The next door takes you to *Rhyd-y-Car* which uses six cottages of the Museum of Welsh Life to track the changes since 1800 in work, family, technology and society. In each house lives a typical inhabitant who you can ask specific questions about his or her house and life. You can also navigate around these two-room houses seeing how they have changed. Some items will show a yellow outline as you move over them, click and you'll find something out about this domestic appliance or piece of furniture. To move on to the next time period you'll have to find the source of light in use in that house at that time.

The teacher options in *House and Households* are nicely integrated and you can set this activity so that you can just explore the houses in different time periods. This is useful if you want to use this section as a source rather than being tied into its structured approach.

Places presents you with the choice of seven buildings from Llwyn-yr-eos farmstead in the south to Y Garrey Fawr in the north. Choose a location and then decide which of the six illustrated narrations you want to listen to covering everything from construction to folklore.





Located in the iconbar for these five sections you'll find one or two puzzle pieces. These will take you to a related activity for the particular section you're in. So, Food and Farming opens an activity looking at similarity and difference by exploring the jobs done in different seasons and how time has effected them.

However, the Time Clock comes with two activities asking Which is the Oldest? and When did things Happen? – the latter appearing on the Web site. Both concentrating on chronology they have two levels to them. For instance, with the former activity at its lower level children are looking at events or facts relating to the documentary they've heard, at the second level time periods with associated images are presented.

There are six activities in all with another two at Rhyd-y-car asking which is the Odd One Out and recognising items in



the right context in Old and New. This led on to some discussions on what was functional and is now collectable and the manual gives you ideas for classroom extension work as well. Or how about Which Region? in the Places section or a Reconstruction quiz through the Finding Out door – answer correctly and Nant Wallter will be rebuilt before your eyes.

However, teachers can set-up the *Activities* section so that students can access some or all activities in sequence or as they will.

The depth, detail and design of this is excellent, though unusual, and is definitely worth a good long look. AU

Product details

Product:	Houses and Households
Price:	£40 (Welsh and English versions of CD and manual both provided)
Supplier:	Anglia Multimedia, Anglia House, Norwich NR1 3JG
Tel:	01268 755811
Ages:	7-11
Web:	www.anglia.co.uk/education/

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In the MIDI

Mike Cook explores an interface with musical origins

This month we're going to look at connecting something to an interface that I haven't used before in my articles, the MIDI interface. This is used by musicians to control sound equipment but is not very far removed from the sort of signals you get from the serial port. There are two major differences however, the baud rate and the physical way the signal is transmitted.

Let's start simply, the baud rate is a very non-standard 31,250 baud but has a standard 8 data bits, 1 stop bit and no parity. Unfortunately that speed can't be coaxed out of the serial port of most computers so you have to have some extra hardware to supply it. Second, the physical method used to transfer the signals is what is known as *current loop*. Normal serial port signals are transmitted with different voltages representing the two states of the line. With MIDI a logic one is represented by no current flowing, and a zero by 5mA flowing. So even if you could get the right speed out of the serial port you would still need extra hardware to convert the voltages into this current.

The final piece of the MIDI jigsaw is the software, in the form of SWIs, you need to drive the hardware, fortunately this comes with all commercial MIDI interfaces. Indeed it is this requirement for software drivers that makes constructing your own MIDI interface a bit of a non-starter for a column like this. However, once we have a MIDI interface we can make use of it to make lots of different things, this month I would like to look at a MIDI light controller.

It is quite easy to control lights with the printer port so why bother with using a MIDI interface? Well, the great advantage with MIDI is that you can use the same sequencer software that controls the music to control the lights. In this way your light show is always synchronised to your music and it is portable across computer platforms.

In principal a MIDI light controller is simple, we need to be able to receive MIDI data, pick out data sent to one of the channels and make the note on/note off data turn lights on and off. What makes this complicated is the fact that the message we need to take note of is mixed up with all sorts of other stuff that we need to ignore. This is where the trusty PIC controller comes into its own, without it the project would be almost impossibly complex.

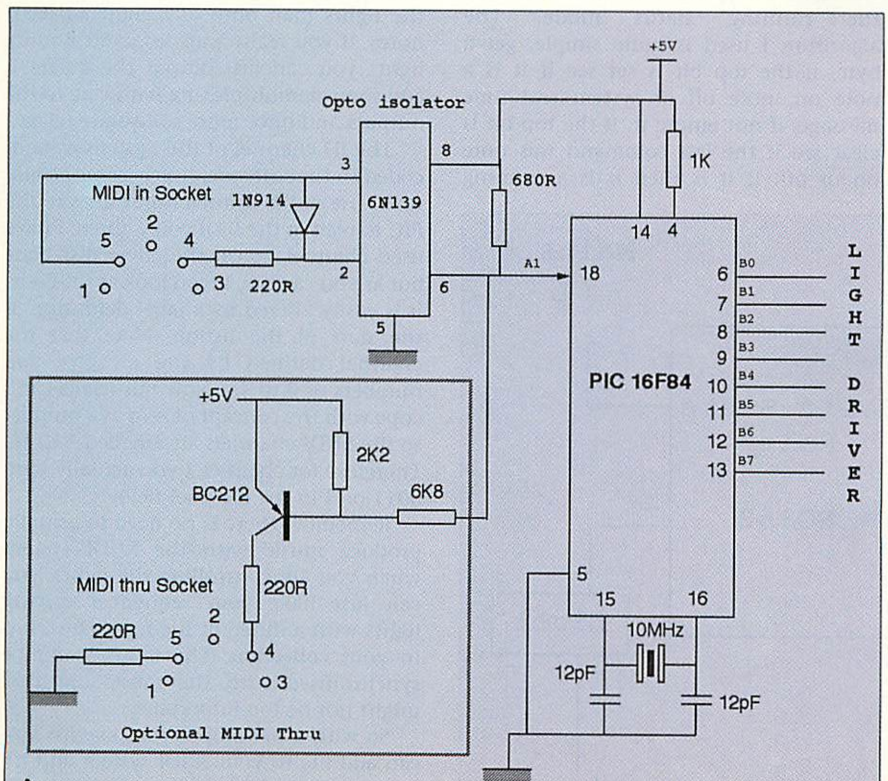


Figure I: The MIDI to lights hardware circuit

Let's look at the hardware first, Figure I, we need to make a bit of a modification to our standard PIC circuit to handle the current loop but the speed difference is simply accommodated in software. The MIDI Standard states that whenever you have a MIDI-in socket there you shall have a MIDI-thru socket. By the way the official spelling is *thru* and in English this reads as through. This is used to pass the MIDI signal onto the next device, if there is one. However, many systems don't have or need one where as others have more than one. The circuitry shown in the box is the optional MIDI thru part and you can have several of them if you want.

At the output end you can simply connect the PIC's outputs to the LEDs, Figure II, but you might think this is not so good for flooding a dance floor with light. If so then you will need a driver to switch mains voltages, this is best done with a solid-state relay as shown in Figure III. These relays come in a number of different current ratings, naturally the higher the current the more expensive they are.

Lamps are normally rated in watts so you will have to do a small sum to work out what current you need. As I = W/V then for a 500W lamp at approximately 250 volts you will draw a

current of 2A. It's not the greatest idea to draw 2A through a device rated at exactly 2A so give it a bit of head room just to be on the safe side. I wouldn't drive more than 300W with a 2A device but that is more than adequate for most rooms – bearing in mind that this is per channel.

With 2A drivers and eight channels there is more than 2.4kW of light to control. Of course if you want more, then 10A solid-state relays are not much more expensive and you can even get relays up to 90A, Maplins stock a good range. Now there is an important point to make about solid-state relays: they don't really turn a device off but power it down. This subtle distinction is only apparent if you go touching the wires when you think it is off. Small leakage currents are enough to give you an electric shock. Always disconnect the mains before doing any work with it.

I imagine there are people who might want to make this project but do not have a PIC programmer. For those people I can provide a fully programmed PIC, see the cover disc for details.

This is one of those projects where the real work is in the software. Coping with the serial MIDI data can be done with the same bit-banging software as we had before, all we have to do is to trim the delay loops a bit. However, once you have the stream of data you need to sort it out. The MIDI protocol has "note on" and "note off" commands and we will use them to control the lights. Essentially what we are looking for are three bytes, a status byte followed by two data bytes, which in binary are:

```
1001nnnn  0kkkkkkk
0vvvvvvv
```

Hear the letter *n*'s stand for four bits (0 or 1) that identify the channel assigned to the light controller, the *k*'s say which light to turn on and the *v*'s are the intensity of the light.

In this project the light intensity is only on or off so a third byte of zero will turn the light off with any other value turning it on. You could make proportionally controlled lights but this is much more expensive. If that was all we had to look out for things would be simple but there are lots of other things that can get in the way.

For example there are System Real Time messages that can be sent at any time, even between the bytes we are looking for. There are commands that we want to ignore and there are also the running status mode. The algorithm I used is quite simple, get a byte, if the top bit is set see if it is a note on, note off or system real time message, if not ignore it. If the top bit is clear see if the last command was note on or off. If it is then it is a running status message otherwise ignore it. The MIDI commands I make use of are shown in Table I.

1001nnnn 0kkkkkkk 0vvvvvvv	Note/Light On (with v=0 this is also note off)
1000nnnn 0kkkkkkk 0vvvvvvv	Note/Light Off
11111111	System reset (all lights off plus restart the PIC)
11111100	Stop (lights off but save the state)
11111011	Continue (restore the state of the lights we had when received a stop)
11111010	Start (all lights off)

Table I: The MIDI codes we are interested in

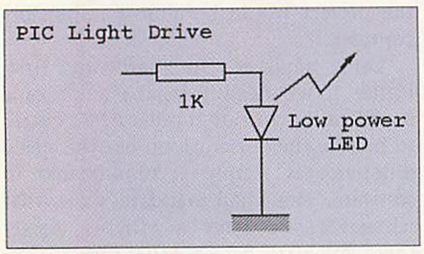


Figure II: The simple LED driver for the hardware

All the others need to be ignored. If you are interested in what other messages there are in the MIDI protocol then I have put some text files on the cover disc that describe them all.

In the "what light" section of the command, represented by *k*'s, there are 7 bits of data, this could potentially turn on up to 128 different lights. However, just like the way sound modules respond to note commands outside their range, my design maps the out of range lights onto the eight we are controlling. In other words it is only the three least significant bits that define the light to be switched. This means that in your MIDI sequencer the lights map onto any eight adjacent notes. If you really want to control more lights you can just output the *k*'s field, add some demultiplexing hardware to the outputs and have more solid-state relays.

The ID channel of this system is hard-coded in the software, however you could make use of the unused input lines to the PIC to read in the ID if you wanted. I have used channel 16 on the cover disc code but as you can see, if you look at the code, it is easily altered by a label definition at the start of the listing. Note that the channel defined by the *n*'s give you numbers of 0 to 15. Now musicians can't cope with the concept of zero as a number so the MIDI channels are labelled 1 to 16. Therefore for channel 4 you actually send 0011 or 3 in the channel field.

Remember there is no need to actually produce music with the MIDI system when you are controlling the lights, you can just have your sequencer driving lights with a different file for each record in your collection. The lights won't be synchronised with the music but that might not be too important.

So with a handful of components you can add life to your MIDI system and it's not only lights you could control with this system but any mains item. A MIDI pop up toaster anyone? AU

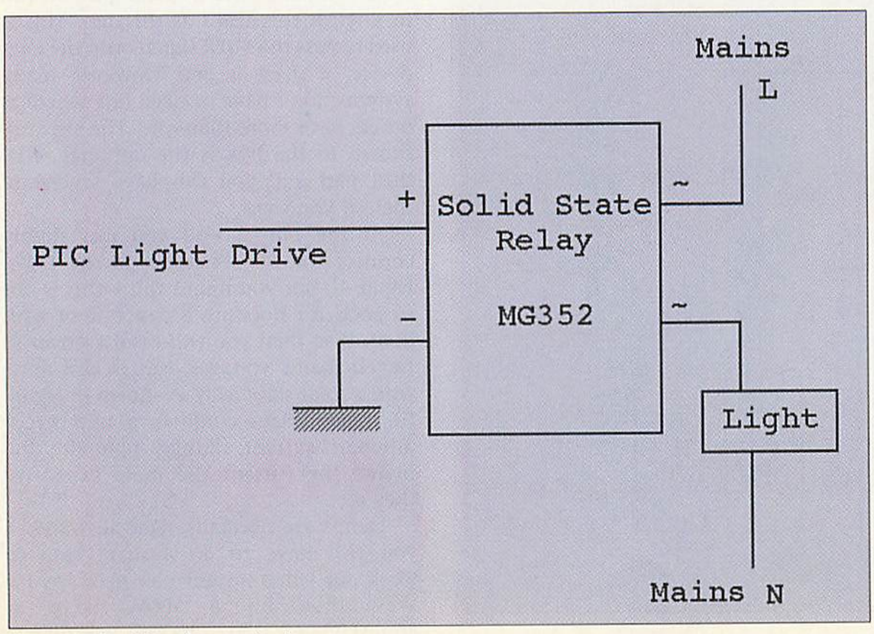


Figure III: The driver for a mains lamp

Acorn Wood

Rambles through

Mike Cook explains why RISC OS machine's are the best for him

There is currently a lot of sole searching in the Acorn Community as to exactly what commitment we have to our machines and what best to do for the future. There are some dyed-in-the-wool exponents of Acorn machines that will believe that they are the one and only true way and all other machines must be shunned for being non-Acorn. Others have to live with one machine during working hours and pursue more enjoyable computing pastimes with Acorn machines.

I have always used other machines alongside my Acorn armoury. In the early days before Acorn I used my own home-made computers as well as a TRS-80 and I make no secret of the fact that I have always had Apple Macs. However, I never liked CP/M nor it's successor DOS or the Windows systems it spawned. The reasons are more practical than idealistic, basically the systems I didn't like were badly designed ones. Now having to work daily with Windows '95 has done nothing to disabuse me of this opinion.

A former editor once said to me "you have no right to hate PCs because you don't have to use them. Only those of us that are forced to use them have that right." Well, he was wrong but now, in his eyes, I too now have that right. The other week I wanted to monitor the signals on the printer port on the PC at work. It proved a virtually impossible task as Windows will not let you access the hardware directly. There are tricks you can do but it is quite complex. What a contrast to the Acorn machine that has a clear and simple operating system call to do this.

So for me the Acorn machine is, and will always be, the simplest system to write your own applications, be it hardware or software related. With an Acorn I can take an idea and see it in operation in the smallest time and with the least effort. This simple fact will ensure that I will always have an Acorn machine in my collection of computers. You will have to find your own personal reasons but I am convinced that you will because there are so many good things about our favourite computer.

There is a problem with people, and that is they won't leave a good idea alone, it always has to be improved and improved until it ceases to be a good idea any more. I am prompted into this observation by how the Internet has gone. Now to many people the Internet is just the World Wide Web as it has grown to consume all other aspects of the Internet.

When it started HTML, the language of the Web, was simple, it was designed for transferring text with a few pictures. What you got on web sites was information. Then the designers got hold of it and wanted to place pictures precisely, wanted to define how the text looked, wanted animation and image maps. In short there was a race, which made the nuclear arms race look pedestrian, to make a web site look good, really good.

What appears to be forgotten in all this is the actual content of the web site, the information has been lost in an effort to look cool. I don't know about you but I spend more and more time on the Web finding less and less. A web session is now more like a tour of a contemporary design exhibition. Or am I just getting old and cynical?

First off it is great to hear from a satisfied customer so I was particularly pleased to here again from Harry Smith:

"Just a note to say many thanks for your help in solving my Viewsheet from the Beeb to A3000 problem. The great Acorn User fraternity rallied round and produced the answer. What would we do without them? Many thanks to all those that helped."

Here's an anonymous query:

"I have acquired a collection of more stylish icons from the Acorn Clan CD and *Acorn User* cover discs. I have put the file in: !Boot.Choices.Boot.PreDesk **and most of them seem to work. However, some like the text file icon, don't change, and others seem to revert back to the originals once I have used the computer for a time. How can I stop this from happening?"**

What is happening here is that some applications are redefining the icons back to their original shape. Whenever the filing system "sees" an application for the first time it look into it for a file called *!Sprites* and uses it to set new icons. If there is an icon name that it already has a definition for it is replaced by the new icon. If you are loosing some icons

Dave Lomas from the Department of Computer Science University of York e-mailed me to say:

"I read a letter from Mike Buckingham in a recent issue of *Acorn User*. He was asking about digital sound I/O. I am currently designing just such a card for my own use. You mention in your reply that podule cards require a four-layer design for reliability. I understand the issues but is it really necessary?

"Does a two-layer board really stand no chance of being usable? Are the reliability problems likely to be of the 'intermittent failure' kind, or the 'this board works but this one doesn't' kind? Is there anything that can be done during two-layer design that can minimise the problems?"

I have had a little success using Vero Wire construction and also the double-sided PCB that Atomwide produced when the Arc first came out. The problems I have had are in the form of writes to the hardware going missing, that is the software writes but the hardware never sees it. Not every time but you might miss one in 500. This will vary with what computer you plug it in to. Some models are more reliable than others. I have never really got down to the root of the problem. I think that a two-layer board could probably be made to work with the correct attention to grounding and impedance matching of the bus.

straight away the icons are being defined from the *Tasks* folder or you have an application at the top level of your harddisc, it's recommended that you have only folders at this level.

Then as you open more folders one or more of your application is redefining the icons. The solution is simple if tedious. Make a note of the icon names that are going wrong and then open all your applications up by Shift+double-clicking and look inside the *!Sprites* files. When you find a duplicate definition delete that particular sprite and save the resulting sprite file. It just so happens that the cover disc contains a program called AddSprites that will do just what you want.

Graham Brooker from Oxford wants to know about screen modes:

"I have just added a memory upgrade to my A7000 computer, which means I can now run things I couldn't before and generally don't have to worry about how many things I've got running but, I still get the same list of colours and resolutions from the Display Manager, regardless of how much screen memory I allocate. It would be quite nice to be able to have say 256 colours at 1024x768. Is there a way of doing this or do I need VRAM which I don't think I can have on the A7000 anyway?"

As far as I know there is no way to easily increase the display capability of your machine – you can't add VRAM. The basic problem is the way the video memory is accessed on the mother board. In any design there is a limit to this and you have reached the limit on this machine. The A7000+ is more flexible in this respect but that particular model hasn't got great upgrade potential as it was designed as a basic business/school machine.

John Dennis is understandably confused over monitors, he writes:

"I am looking to purchase a Risc PC soon and have some questions about monitors. I have an AKF60 with my A420/1, so will this work with a Risc PC? I currently can't get modes like 31 (SVGA) on this monitor and my A420, will they work with this monitor on a Risc PC?

"Also does it make sense to opt for a multi-sync instead of a SVGA if I can afford it? How many Risc PC users use SVGA and not multi-sync? I can't understand the AKF numbers! What do they mean, and what is the difference between AKF90, AKF91, and AKF92? Do the advertisers know the difference as often I see two different adverts quoting the same price for an AKF91 and an AKF92? Does this make sense? Or has one advert made a misprint?"

The numbers are just made up so there is nothing you can work out from them. The RISC PC will be usable with most monitors as it has a very flexible monitor driver. The AKF60 will certainly work perfectly well with it and there is even a standard driver file for this monitor. If you don't have a monitor that has a mode definition file you can use the application *!MakeModes* to create one.

I had to do this a few years back to drive a liquid crystal projector. All you have to do in this program is to fill in some boxes stating things like minimum and maximum line rates and a few other timing details available from the monitor's data sheet. With the Risc PC modes, like Mode 31, don't exist as such. If a program calls for one the operating system matches as closely as possible the resolution of your screen to the mode requested.

This gives you the flexibility to use virtually any sort of monitor however I would always go for a multi-sync if you can afford it as you get so much more flexibility. Many games are very fussy about what screen mode they run in as they access the screen memory directly to achieve a greater speed. With these the emulation approach fails because the software doesn't know anything about the compromises that have to be made.

As to your specific requests for the differences between the 90, 91 and 92, well they are all different but in some cases not by much. You see Acorn want to supply a monitor with their computer but they don't make their own. Therefore they get in other peoples monitors and sell them on. As the supplier changes the specifications Acorn have to change the number.

As far as I can tell the AFK90 was a bit of an odd ball and was not around for long. The 91 and 92 were both made by Iiyama and despite the sometimes steep price difference the only real difference was that the 92 had an Acorn badge on the front. So seeing them advertised at the same price would be correct. The AFK 94 was made by Microvitech and was a stop gap measure when supplies of the other monitors dried up, and the AFK85s were made by Phillips. AU

It's that time of year again, when all over the land students have to complete some kind of project. M. G. Van Gordon writes:

"I am a regular reader of *Acorn User* and regularly admire your feats with Acorns and general electronics. I am a GCSE electronics student at Calday Grange Grammar School and we are about to start our course work, desperate for an idea I turned to my copies of Acorn User and in the February '96 issue I found a DVM project by you.

"It initially looked quite interesting, but I found that the program to run the hardware was much too difficult for me to understand and rewrite for a PC – I am at a school of sinners where the only Acorn is a seldom-used BBC Master. Being GCSE I can't just create the hardware, I need to be able to understand and adapt it to call it my own.

"I know you focus mainly on computer integration in your projects, but do you have any suggestions as to something I might be able to do with simple computer integration or standalone electronics. I can just about handle BASIC but that is about all, and I don't have many *Acorn User* magazines."

This article was an update of the software from my original *Micro User* article of April '85 where there was software for a Model B and also more of an explanation of the signals coming out of the chip. In those days I was allowed a lot more pages for an article than I am today, some would run to five or six pages including listings.

The problem with modern desktop applications is that there is so much code in maintaining the window and menus side of thing that often what you want to do is obscured. That's why I always try to include a simple BASIC program that handles just the nub of things. I did that with the DVM and it is only 31 lines long. However, if that's too much to cope with then why not do something using the IIC interface, it only takes one line of BASIC to read or write to it.

Also hardware developed for this can be used on the dreaded PC as it is relatively simple to make an interface. If you are forced in to using PCs I would recommend the book *PC Interfacing* by Pei An published by Newnes as this covers the software drivers you will need on a PC. Most of the examples are in Visual BASIC.

For ideas then look on my web site at http://math.mmu.ac.uk/Physics/Acorn as it contains the full listings of all my articles plus many of them are available to download. For ideas about standalone projects there are a few Electronics magazines in the newsagents which have many ideas every month.

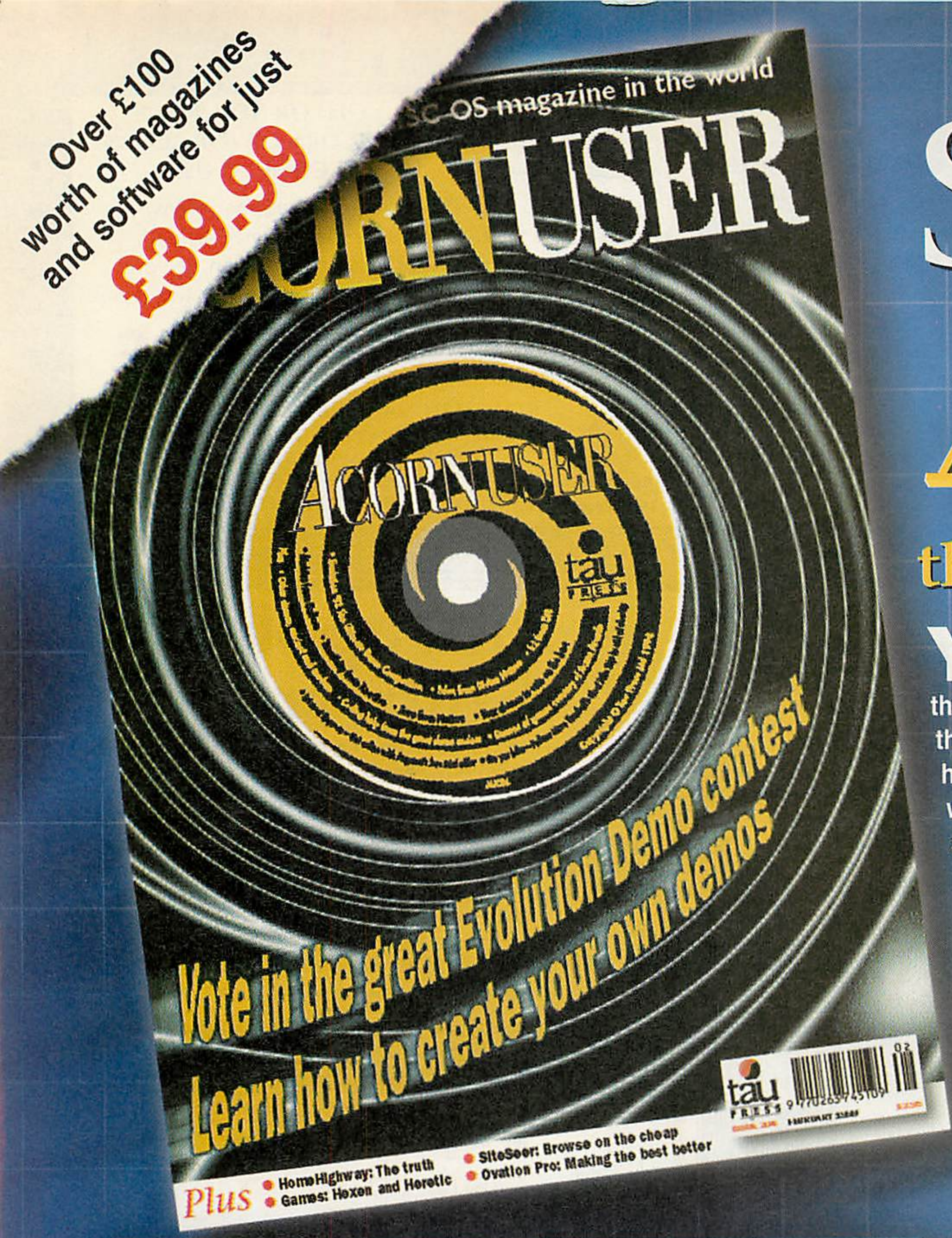
However, as you said you will have to make your own contribution somewhere along the line. Perhaps the best bet would be if you were to learn the PIC assembly language and do a PIC-based project, then that could be standalone or integrated into a computer system as you wished. Best of luck with your choice and remember what a good teacher is looking for in a project is not if you complete it but how you go about tackling it, I hope you have a good teacher.

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LETTERS

Something for nothing

While I agree that allowing other programmers to view and modify one's source code can produce improved versions, I believe that this can also result in major problems for exactly the same reason Justin Fletcher wants source code available.

I taught myself BASIC programming seven years ago on the BBC Micro, using the well written User Guide. When my father bought a Risc PC, I started programming that too, using BASIC. Very quickly I realised that there was a whole area of programming that I was unable to reach – a graphical interface.

As didn't know of any books that teach you how to add a GUI to your programs, I was forced to look through other people's code to try to learn what it was I needed to add to my programs. Wherever I looked, I kept seeing these commands starting with SYS with various parameters after them. Altering them invariably produced errors.

I was lucky enough to be able to go to the Wakefield Show (May 1998), and bought, from the charity stall, the RISC OS 2 PRMs. Looking through them I realised that these books contained what I needed to know, but in a rather daunting format. They are Programmers **Reference** Manuals, not books that step-by-step introduce you to the SWIs, and although they tell you what the commands do, they do not tell you how to use them. Trying to teach oneself how and when to use these commands is rather like teaching yourself French from nothing more than an English to French dictionary.

However, with difficulty I was able to teach myself, among other things, how to add a GUI to my programs, but with hindsight, I realise that mucking about with other peoples programs can be very dangerous. One of my own programs is a backup utility. To perform the backing up (ie. the copying of files and directories), it uses the OS_FSControl 26. If someone gets hold of my program and decides to change the 26 to a 27, then instead of the files being backed up, the files are deleted.

Although this may be an isolated case, the problem remains – how do you easily teach yourself how to use SWIs? I have never seen a review of a book or an advertisement for a book that provides the equivalent of the *Books for Dummies* series which are common for PC software.

There are occasionally articles in magazines, but the authors are always (and quite rightly) very experienced programmers and discuss rather too complicated subjects (such as the new Nested Window Manager, child windows, furniture windows, and 24 bit icons).

While such articles no doubt have great value to already experienced programmers, to an inexperienced programmer, an article on correctly initialising your program would be very useful, or loading, setting up and manipulating windows and icons. Creating interactive help messages and responding to !Help's messages especially for help over menus would equally be

Linux again

Reading the letters page in the latest issue (Jan '99) of *Acorn User*, it struck me that there's a certain amount needs to be cleared up about Linux and how it affects Acorn users in general. Firstly, Linux is not a version of Unix, as such – Linux is a free, open-source Unix-*like* operating system that aims towards POSIX compliance (POSIX is the international standard which defines, amongst other things, the API layers for all the standard *ix libraries)

And, contrary to what P. Dennerly was suggesting, there *is* a version of Linux available for ARM machines (including the Risc PC et al) and there has been for several years now. Corel are using it in their Netwinder boxes, Hugo Fiennes (yes, *that* Hugo Fiennes) is using it in his Empeg in-car mp3 decoder (www.empeg.com). There are more details on ARM Linux at http://www.arm.uk.linux.org/

There has been a great deal of attention paid to Linux in the Acorn newsgroups, and on various websites. The reason for this is that the Linux mentality is very similar to the Acorn mentality – vehemently anti-Microsoft and anti-corporate. A large number of experienced Acorn users have also been using some flavour of Linux for a few years, and now that Acorn have effectively died, people have started looking for something else that fits in with their computer world-view. Linux seems to be that something.

Unfortunately, for all the lovely media glow surrounding Linux at the moment, the simple fact remains that it is not yet a viable desktop OS – it is intrinsically command-line based, and there is not yet a stable, user-friendly, easy-installing, consistent GUI available – though with the advent of Gnome and KDE this looks set to change. People get scared enough using a 'normal' *Win95* or RISC OS machine – imagine telling someone that in order to use a floppy disc they have to type "mount -t vfat /mnt/floppy /dev/fd0" before Linux will even recognise that it has a floppy in the drive!

Don't get me wrong – I love Linux personally, and use it as my day-to-day OS on my PC – but that's because I know a sufficient amount about it to feel comfortable using it. I wouldn't let a regular user anywhere near it.

There's a lot much more I could say, but I'd better stop here for fear of rambling

C. Whitworth
chris@parm.net

Thanks for the information, as you can read from the news in this issue, it seems that Acorn are not dead – or, perhaps more importantly, RISC OS is not dead (Acorn on the other hand have attempted to change their spots).

Many people have said that given the demise of Acorn they would move to Linux – but even their ideal is the future development of RISC OS, something we can now look forward to.

much more approachable for someone unsure of the use of SWIs.

While an inexperienced programmer playing around with someone else's source code can cause problems, the same can happen regardless of the form the program is in (even compressed or *Absolute*). However, I see another problem with releasing source code that ties in with the idea of Acorn needing charity.

Linux has recently received a lot of coverage in the national press as it is open source and free and is thought in some ways to be better that Microsoft's *Windows NT*. But because it is free and open source, it seems to me that this makes it as bad as Microsoft shipping its Internet browser free, to force Netscape out of business.

If, as Mark Seaborn suggests, Acorn release the source code for *!Draw*, then it is possible what it is improved so much by hundreds of programmers that it surpasses similar commercial products and thus forces the commercial product out of the market.

Reading the Regan Files on Jonathan Duddington made me think – he sells *!Pluto* for just £24, and yet over the Internet are products of very similar quality such as *!Messenger* and *!Newsbase* that are free. All three authors have put in tremendous amounts of effort and time to produce these products and yet because Jonathan's income is from sales of his software, his product is discriminated against because he sells it.

Of course, I acknowledge the tremendous generosity of the authors of *!Messenger* and *!Newsbase*, who are prepared to spend huge amounts of time developing their software and then allow others to use if for free, but in doing so, it could be said that because of our selfishness and constant want of free products, we are forcing such programmers as Jonathan Duddington into poverty.

I accept that there is no easy answer to this problem, and I am not trying to say that if you use free software that you are a selfish and heartless person – I use *!Zap*, *!StrongED*, *!StrongBS²*, *!PDTracker* to name but a few. What I am saying is that when a free product rivals a commercial product in terms of quality and features, an agreement should be reached between the parties so that one product is not discriminated against because of it not being free.

However, it is not easy to suggest what such an agreement should be. It is unfair to make users of a free product pay just because there is a commercial product available, especially if the authors of the free product don't want the money, but equally it is unfair to force the author(s) of the commercial product to make it free.

Of course, authors of free software will quite rightly point out that they are not forcing anyone to use their software just because it is free – this is very true, I still regularly use *!Paint* despite there being free alternatives, but it seems in todays world, a comparison of two rival products is primarily based on the price of the products.

I am not saying that money is no object. Yes, I would dearly love to own a copy of *!Photodesk*, *!Vantage*, *!TopModel*, and be able to afford an upgrade to a StrongARM processor. But I can't afford it. What I think is wrong is that it seems to me that we are in danger of discounting commercial products just because there is a free alternative.

I agree that when the free product is of similar quality to the commercial product it is difficult to justify the purchase of the commercial software, but I think that if we don't spend money on software we are further hastening the demise of the Acorn platform, and discouraging development of commercial software that could potentially rescue Acorn from the pit into which it has fallen.

If you release source code, you are immediately making your software free, whether you want to or not. Physicists have known for decades that it is not possible to get something for nothing. In this particular case, we may be sacrificing those who chose to make writing Acorn software their livelihoods for the economy of not having to pay for quality software.

Matthew Sackman
Nottingham

Fade to Mac?

I've got to put my hand up and admit to being one of the masochistic souls who have been an *Acorn User* since the days of the Model B. So I've watched with some interest the present goings-on in the Acorn community, and am glad to find myself surrounded by people who are actively seeking ways to give this platform a future.

I did show a moment of weakness a few days ago. All that stopped me from returning home from a Mac dealer with a new computer was the thought of spending hours (days, weeks?) attempting to transfer data and then get the Mac to understand my accumulated files, only then to start at square one with a new OS.

So at the end I realised I'm going to stick with what I know, but am aware that at present our platform has no future thanks in no small part to years of mismanagement and bungling by Acorn, culminating in their dumping their only profitable division.

My hope is in the knowledge that RISC OS users are quite passionate about their box of silicon and plastic, and now Acorn themselves are hopefully out of the picture there may be among us someone with the business skill and imagination to continue development.

Finally to the point, I noticed in the PC press that Corel has produced a StrongARM-based box with a working version of Linux. Could this motherboard/OS become the basis of a RISC OS front-ended Linux box for the Acorn community? Linux still doesn't have a decent GUI, so there may well be interest in helping to port a RISC OS front end to it, and RISC OS as it stands will have trouble making the leap to the newer ARM processors assuming Acorn would let go of the source code in the first place.

It would mean allowing the GUI into the public domain, but think of how many people would buy a good shrink-wrapped Linux/RISC OS box. In the meantime good luck to all those who are trying to breathe some life back into the present technology.

Dr Charles Lane
C.Lane@argonet.co.uk

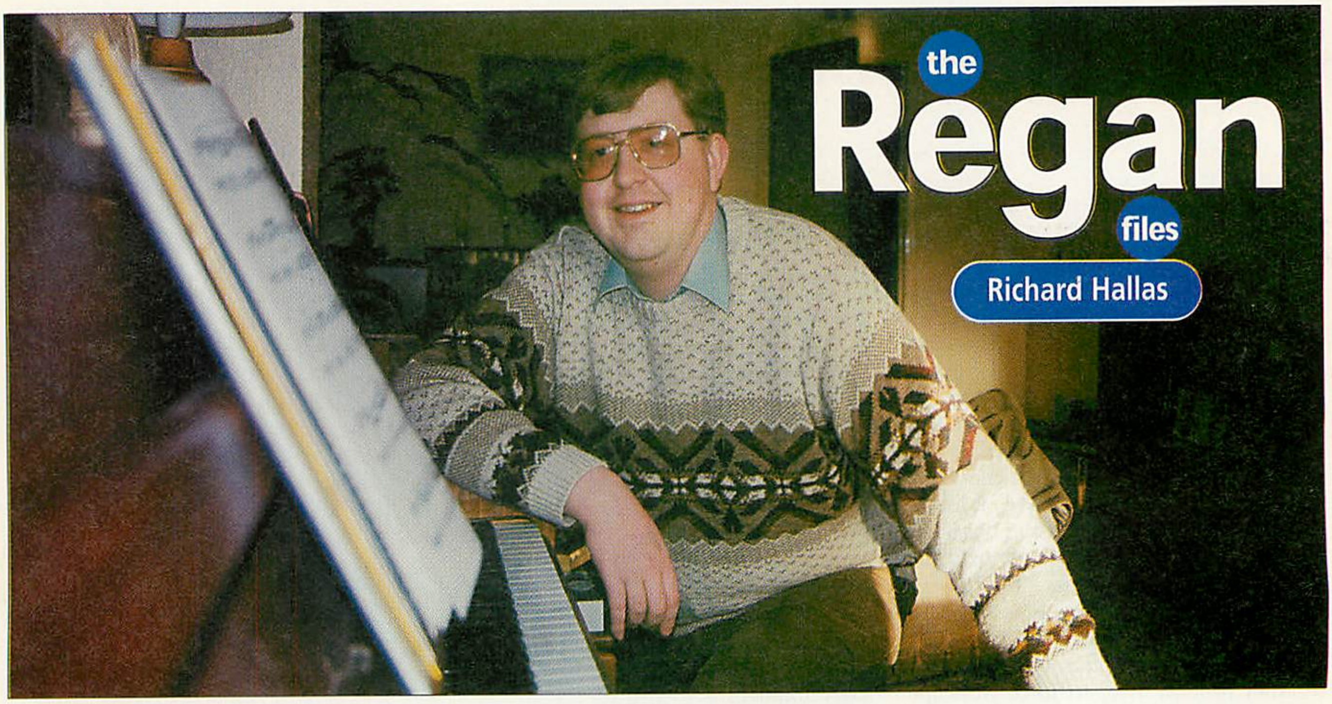
Well it seems Acorn may now let go of the code and we may well be in for many more happy years of RISC OS usage on faster and faster machines.

Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow Acorn User readers, then write in to:

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Richard Hallas

After driving past more northern town clichés than I thought possible in one trip, including a steep cobbled hill straight out of the Hovis advert, I half expected Richard Hallas to be a character straight out of Alan Bennett's *Talking Heads* complete with a Peter Sallis voice. Richard is certainly a character, but with his ability to write it seems more likely that he would be penning the characters himself. He's been keeping himself occupied as the editor of *Risc User* during the last three years.

'I am still going to be DTP editor,' says Richard. 'I think it is good for the continuity of the magazine that I still will have some connection with it. You see, the problem is that I am a perfectionist. I can spend days making sure that just one page is well laid out. This means that editing has been taking me far too long; I have not had time do anything else. I want to get into some serious programming – and maybe write the odd article for *Acorn User*.'

Besides Acorn machines, Richard has other passions in life. Music is a major one, which is linked to Richard's 'paying hobby' as he likes to put it: he is a music typesetter. Most of the time it is routine updating of music. Occasionally he gets to do the interesting and exciting stuff. He gets original manuscripts; a lot of well-known composers are very prolific and write music very fast which is sometimes almost illegible. Add to this the composer's notes which have often been written in haste and usually *are* illegible, and Richard gets to edit these.

Editing means he gets to influence how the music will eventually sound. Richard has a degree in Music which helps him cope with all this as well as a degree in Computational Maths.

'I was primarily a musician. At school I was musician of the year with my tenor horn, I also played the french horn, but these days I only tinker around on the piano for my own amusement.'

'I did a music degree at Lancaster University. My final year project was the transcription and effectively publishing of a medieval manuscript. The manuscript was in ancient notation, and I had to bring it in to modern notation and edit it. At the time my college had just got a new Macintosh with a music program.

'I realised it was something which interested me. I got more into the subject and subsequently I read up on it; you need to know about the finer points of notation. I realised it was a way that I could earn some money on my own.

'I was primarily a musician'

'I got an Archimedes because I wanted one; I was aware of both *!PMS* and *!Sibelius*. I actually got quite involved in the software in the early days, I was one of the first people to have a copy of *!Sibelius* at the time when the Finn brothers were trying to get it published by Computer Concepts. I actually wrote a very long report for CC on it. Unfortunately at the time it did not work as well as it should have – it was not in the spirit of the machine.'

Even though Richard has *!Sibelius* he prefers to use *Professional Music Scribe* (PMS) by Phillip Hazel. It is a less well-known script-driven program, and to use it you have to know what you are doing musically.

'*!PMS* was what I was using out of choice. It was basically a very capable program, written by someone who was a programmer and not a musician. Which was evident, because even though there was a font of music symbols, which sort of served the purpose, they were not really artistic enough.

'I felt that in order to get my output up to scratch I needed a better font. I created a brand new font for this, based on existing music designs and that is now the font which is distributed with *!PMS*. Then *!Sibelius* got developed, and in order to have a uniform house style for myself I created a *!Sibelius* font called Keynote (also the name of my music typesetting business).'

Richard's first Archie was actually his 21st birthday present back in 1990, and he started subscribing to the various magazines. He approached Beebug with the idea of writing some articles. Coincidentally the first issue of *Risc User* that Richard had an article in was Mark Moxon's first issue as technical editor.

'I really think *!OvationPro* is an excellent package. It was so good to switch off the Mac. Acorn shooting itself in both feet was sad, because they had asked me to do the show guide. I just hope something comes of the attempted rescue of RISC OS. There is nothing that would please me more than seeing RISC OS being successful and continuing with good new products.'

Jill Regan AU